



**US Army Corps
of Engineers**
Waterways Experiment
Station

AD-A267 830



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Technical

53-3
June 1993

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Demonstration Erosion Control Project Monitoring Program

Fiscal Year 1992 Report

Volume IV: Appendix C Batupan Bogue Watershed Profiles and Cross Sections

*by Terry N. Waller, Lisa C. Hubbard
Hydraulics Laboratory*

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Prepared for U.S. Army Engineer District, Vicksburg

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Batupan Bogue Watershed Profiles and Cross Sections

by Terry N. Waller, Lisa C. Hubbard
Hydraulics Laboratory

U.S. Army Corps of Engineers
Waterways Experiment Station
3909 Halls Ferry Road
Vicksburg, MS 39180-6199

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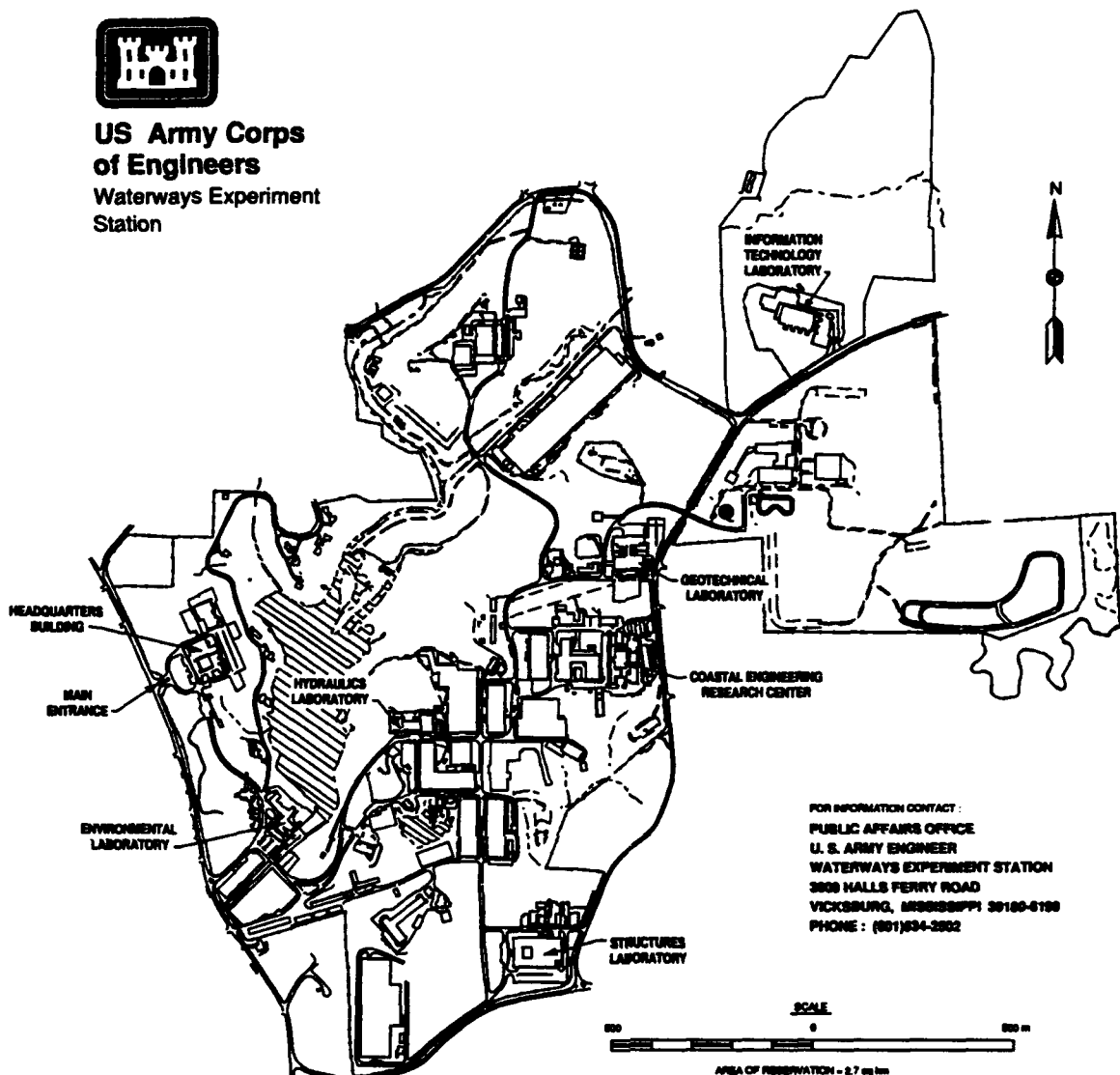
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Prepared for U.S. Army Engineer District, Vicksburg
3550 I-20 Frontage Road
Vicksburg, MS 39180-5191



**US Army Corps
of Engineers**
Waterways Experiment
Station



Waterways Experiment Station Cataloging-in-Publication Data

Waller, Terry N.

Demonstration Erosion Control Project Monitoring Program : fiscal year 1992 report. Volume IV: Appendix C, Batupan Bogue Watershed profiles and cross Sections / by Terry N. Waller, Lisa C. Hubbard ; prepared for U.S. Army Engineer District, Vicksburg.

295 p. : ill. ; 28 cm. — (Technical report ; HL-93-3 v. 4)

1. Stream measurements — Mississippi — Statistics. 2. Watershed management — Mississippi. 3. Batupan Bogue Watershed (Miss.) 4. Channels (Hydraulic engineering) I. Hubbard, Lisa C. II. United States. Army. Corps of Engineers. Vicksburg District. III. U.S. Army Engineer Waterways Experiment Station. IV. Title: Batupan Bogue Watershed profiles and cross sections. V. Title. VI. Series: Technical report (U.S. Army Engineer Waterways Experiment Station) ; HL-93-3 v. 4.

TA7 W34 no.HL-93-3 v.4

Appendix C

Batupan Bogue Watershed Profiles and Cross Sections

Channel Profiles

Comparison plots of channel profiles in the Batupan Bogue watershed from 1985 and 1991 are shown in Plates C1-C38. The following channels are represented in the profile plots:

Creek	Plate
Batupan Bogue	C1-C3
Perry	C4-C6
Jack	C7, C8
Perry Tributary	C9
Big Bogue	C10, C11
Eskridge	C12, C13
Sykes	C14, C15
Worsham	C16, C17
West Fork Worsham	C18
East Fork Worsham	C19
Middle Fork Worsham	C20
Jackson	C21, C22
Wilkins	C23
Eskridge Tributary	C24
Little Bogue	C25-C29
Pruill/Powell	C30
(Continued)	

Creek	Plate
Mouse	C31, C32
Caffe	C33
Campbell	C34
Epison	C35
Crowder	C36, C37
Little Mouse	C38

Channel Cross Sections

Comparisons of channel cross sections in the Batupan Bogue watershed from 1985 and 1991 are shown in Plates C39-C289. The following channels are represented in the cross-section plots:

Creek	Plate
Batupan Bogue	C39-C61
Perry	C62-C81
Jack	C82-C92
Perry Tributary	C93-C95
Big Bogue	C96-C109
Eskridge	C110-C122
Sykes	C123-C146
Worsham	C147-C162
West Fork Worsham	C163-C169
East Fork Worsham	C170-C174
Middle Fork Worsham	C175-C179
Jackson	C180-C185
Wilkins	C186-C193
Eskridge Tributary	NONE
Little Bogue	C194-C233
Pruill/Powell	C234-C237
Mouse	C238-C246
Caffe	C247-C251
Campbell	C252-C260
(Continued)	

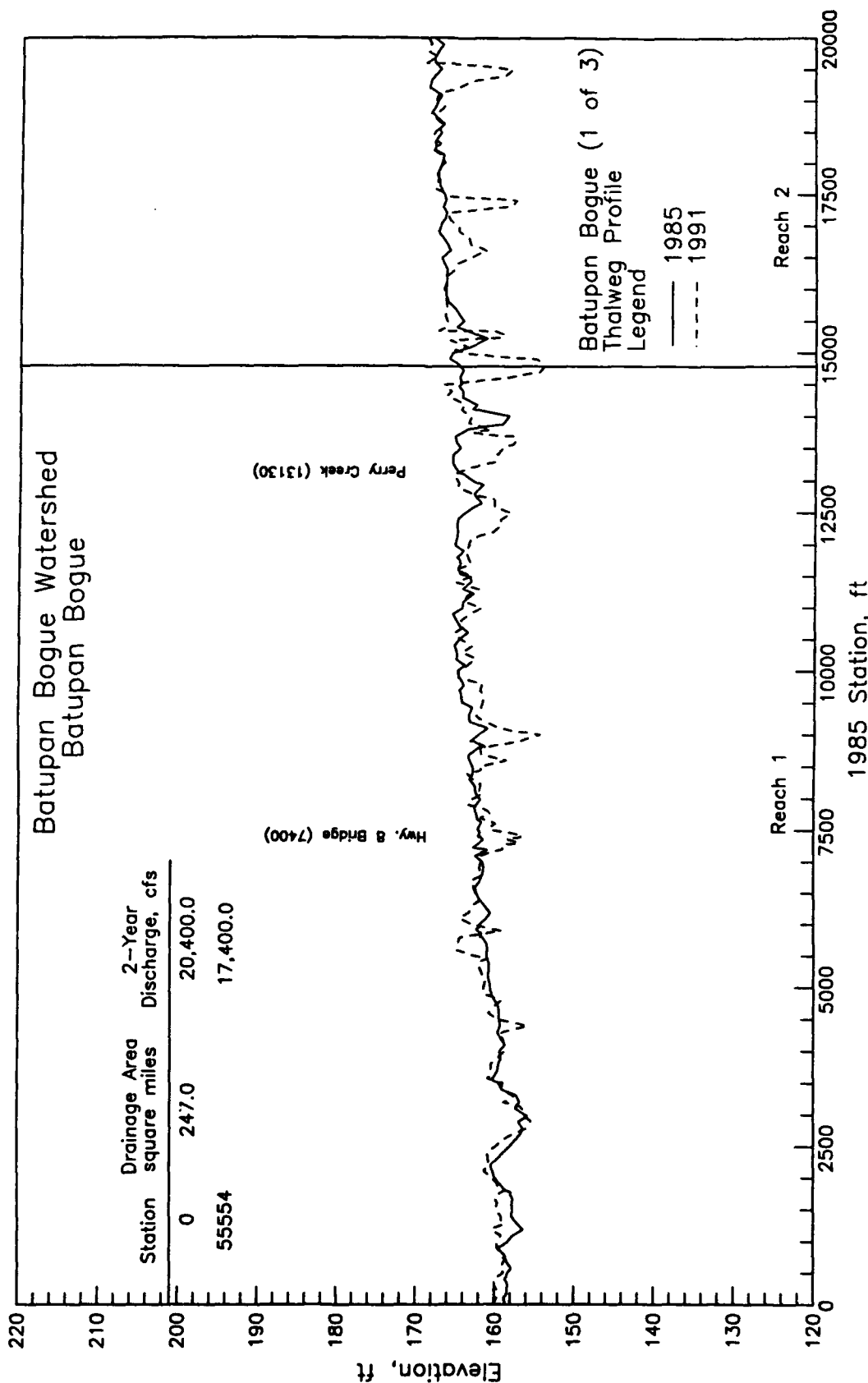
Creek	Plate
Epison	C261-C266
Crowder	C267-C284
Little Mouse	C285-C289

Batupan Bogue Watershed Batupan Bogue

Station	Drainage Area square miles	2-Year Discharge, cfs
0	247.0	20,400.0
55554		17,400.0

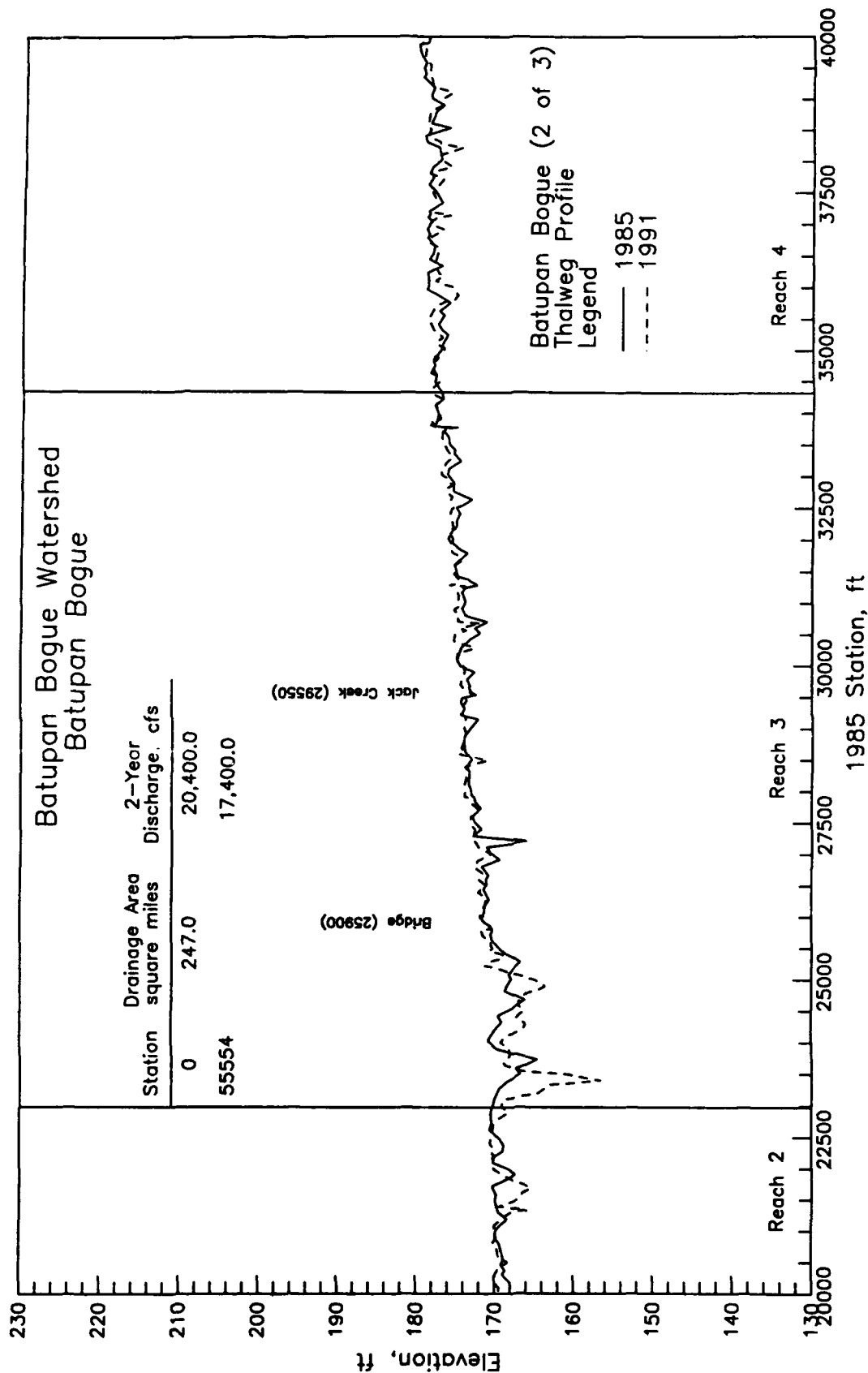
Hwy. 8 Bridge (7400)

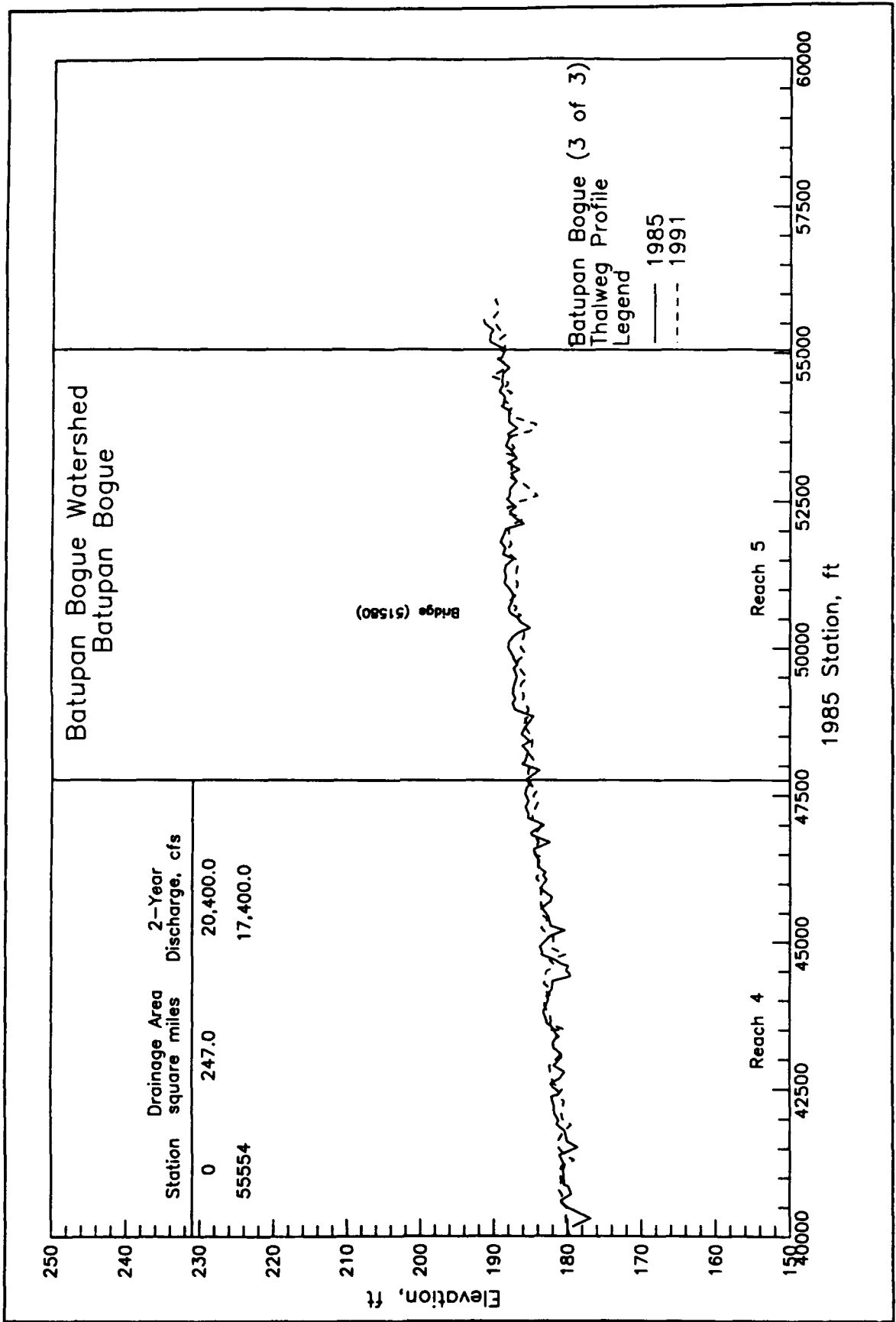
Perry Creek (13130)

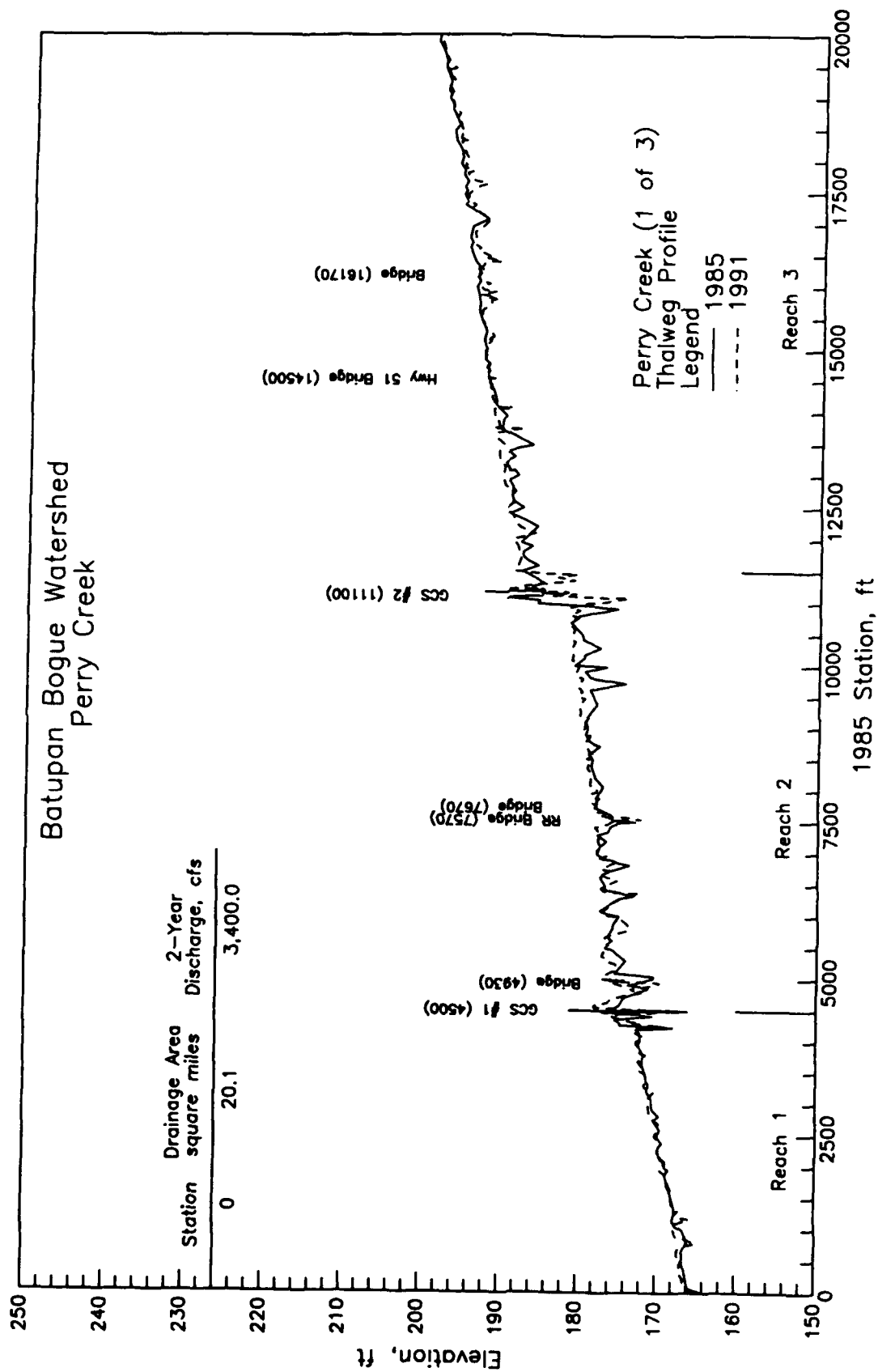


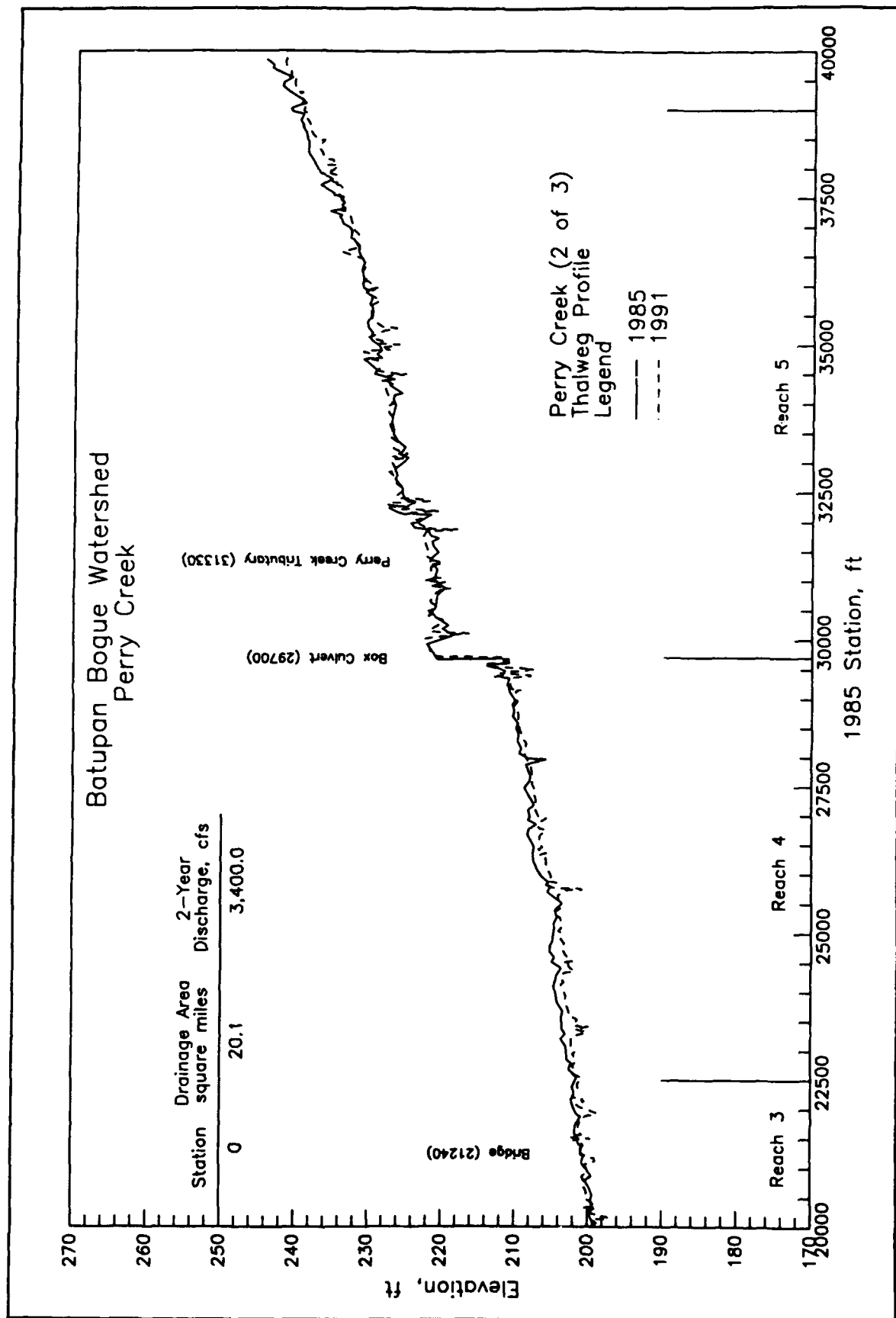
Batupan Bogue (1 of 3)
Thalweg Profile
Legend
— 1985
--- 1991

Reach 1
Reach 2
1985 Station, ft







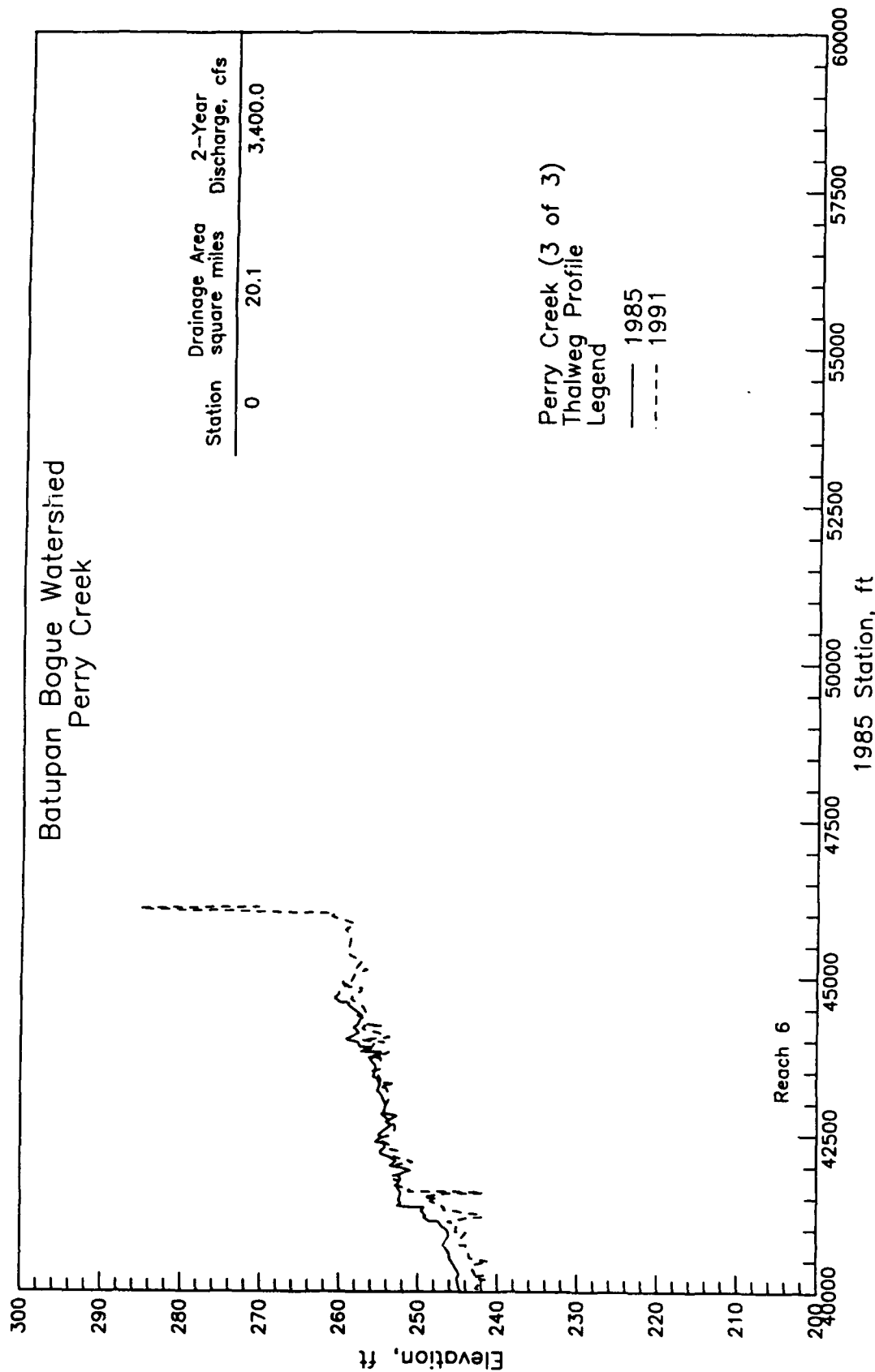


Batupan Bogue Watershed Perry Creek

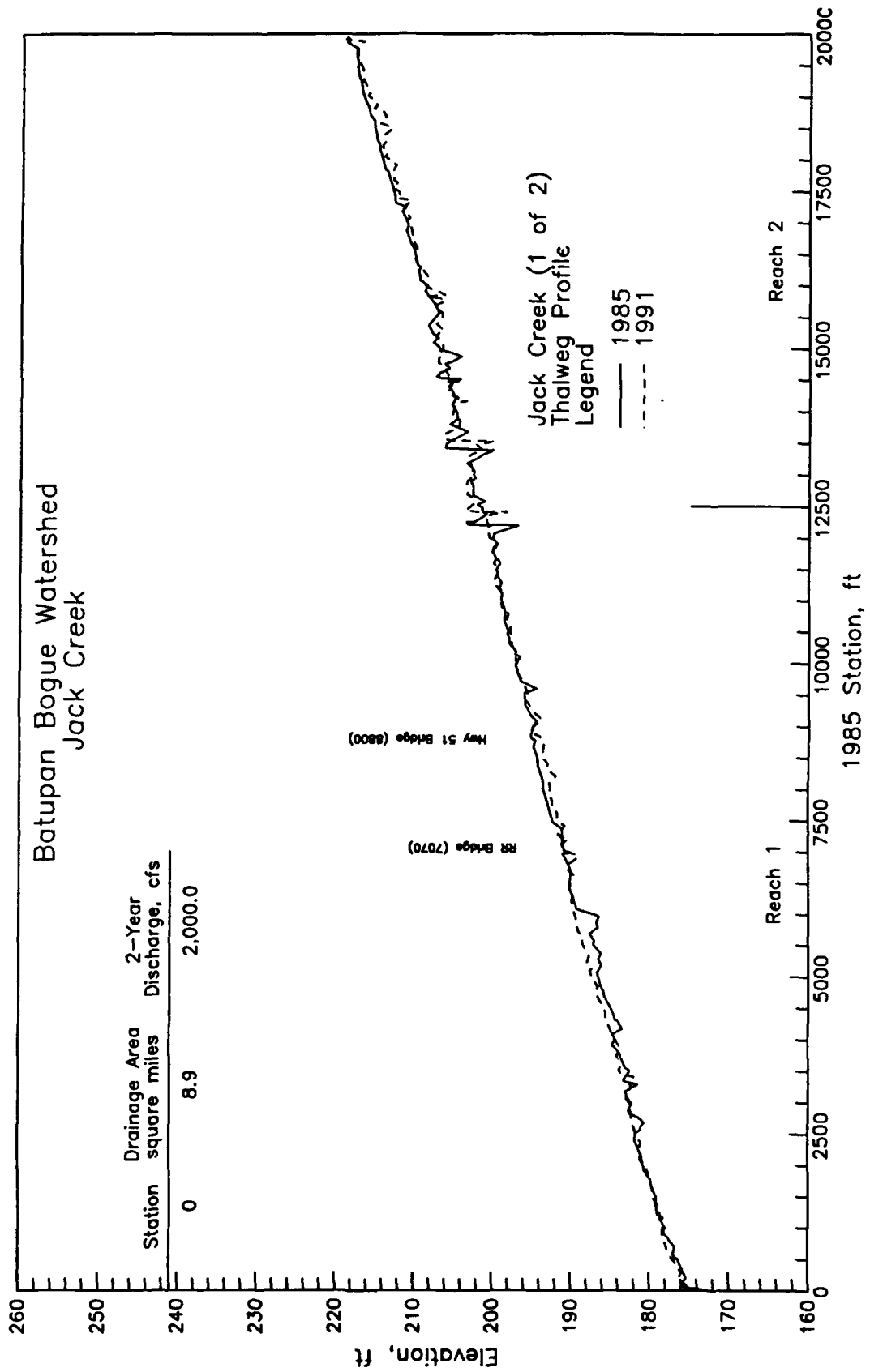
Station	Drainage Area square miles	2-Year Discharge, cfs
0	20.1	3,400.0

Perry Creek (3 of 3)
Thalweg Profile
Legend

— 1985
- - - 1991

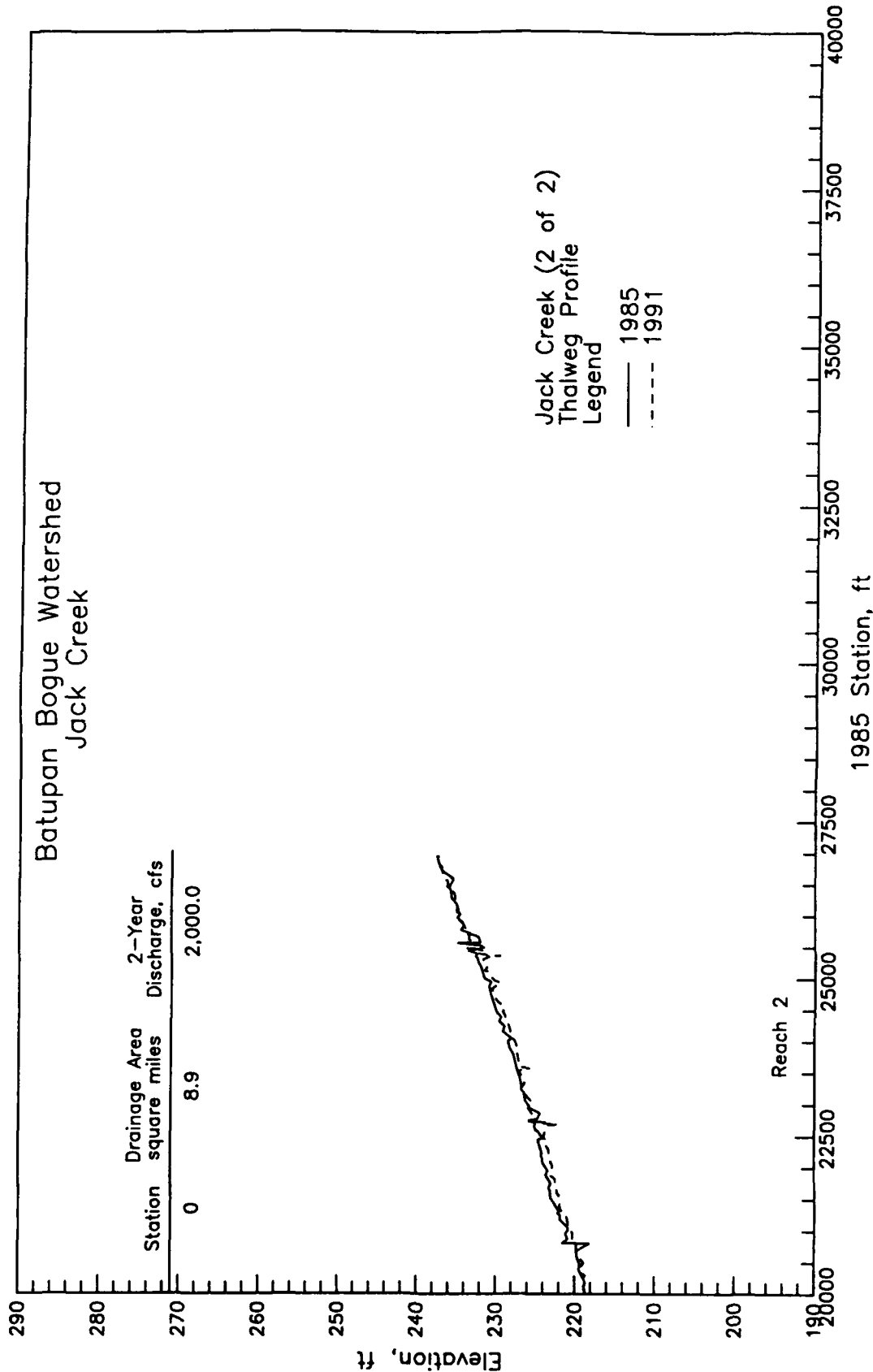


Batupan Bogue Watershed Jack Creek

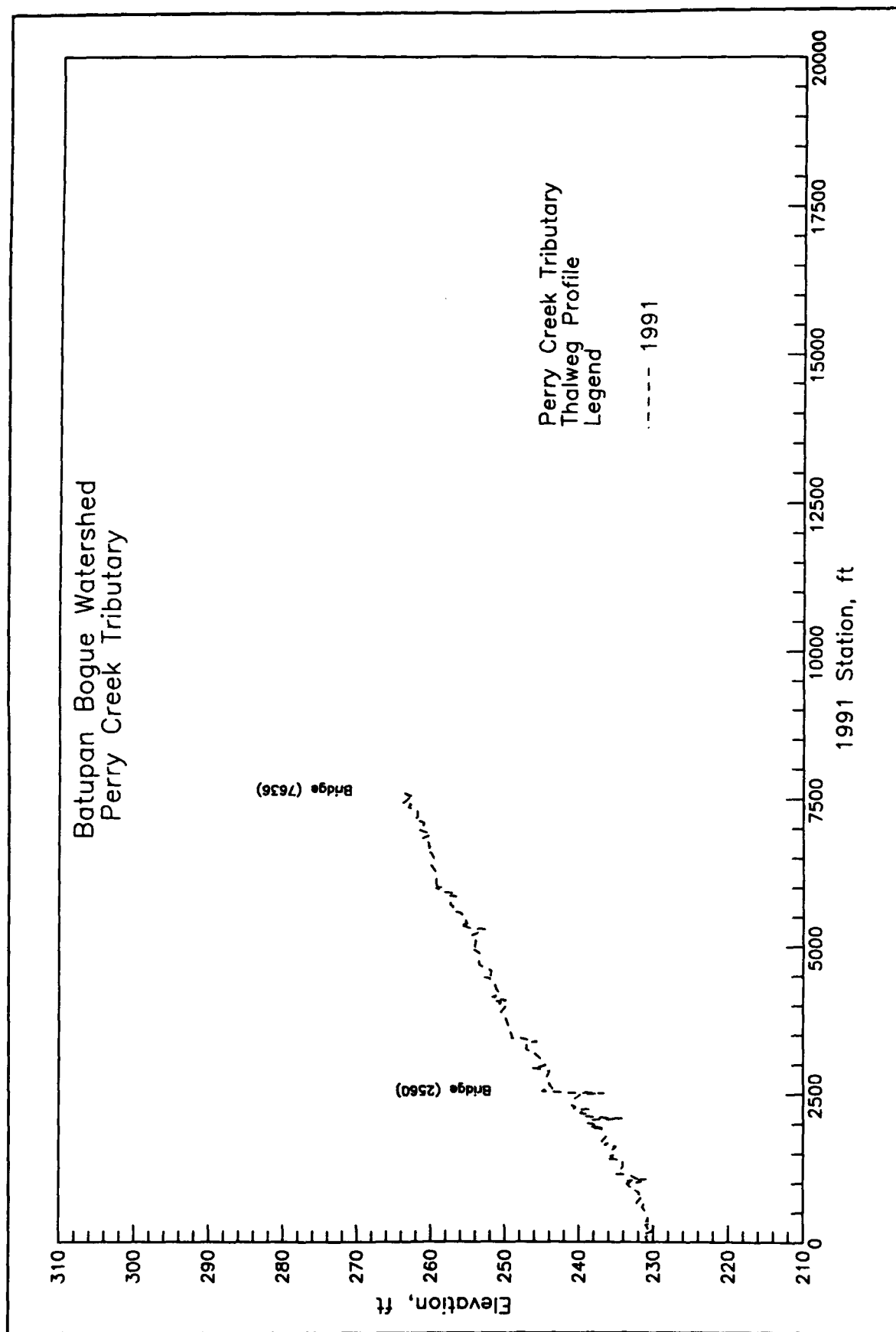


Batupan Bogue Watershed Jack Creek

Station	Drainage Area square miles	2-Year Discharge, cfs
0	8.9	2,000.0



Jack Creek (2 of 2)
Thalweg Profile
Legend
—— 1985
---- 1991



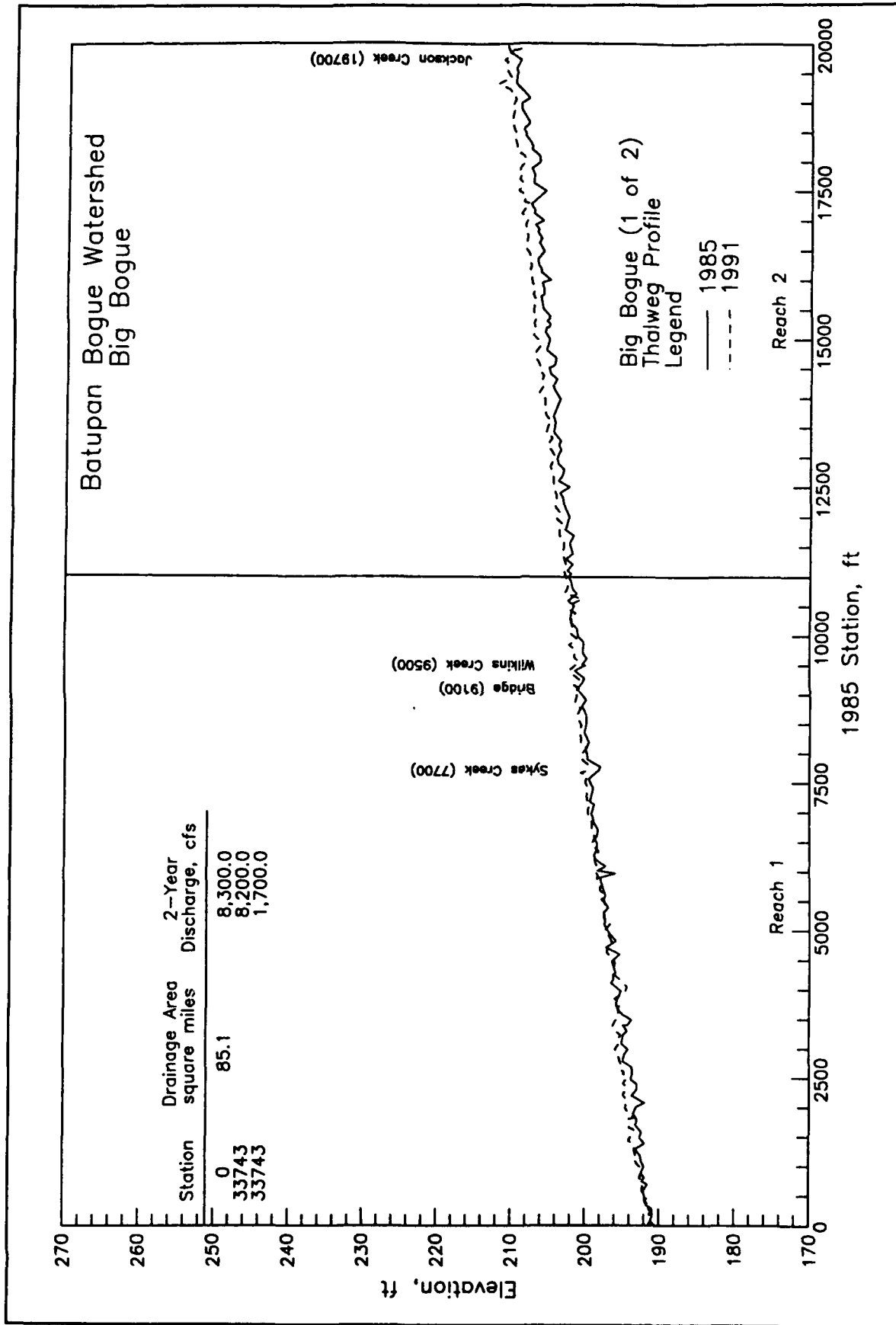
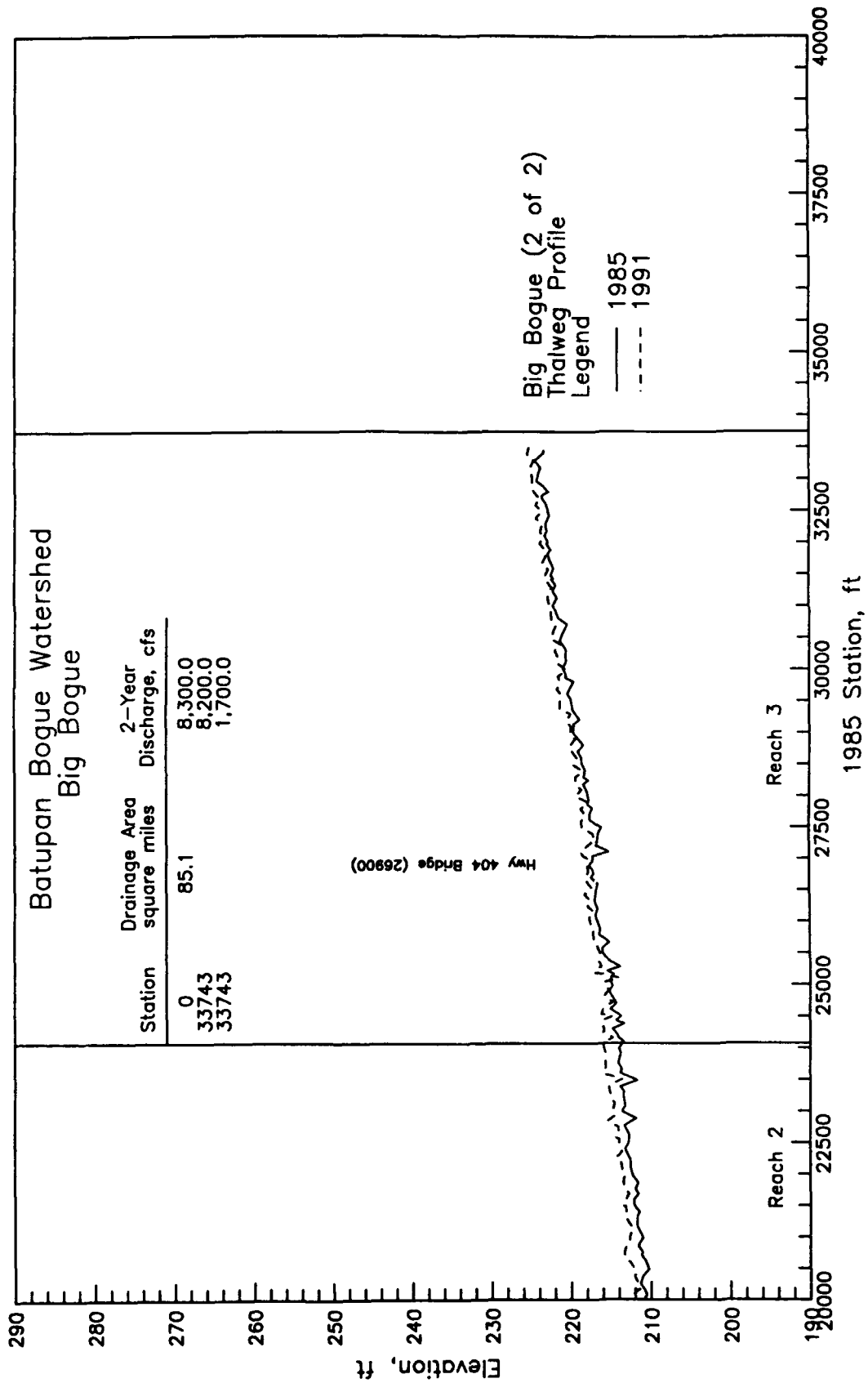
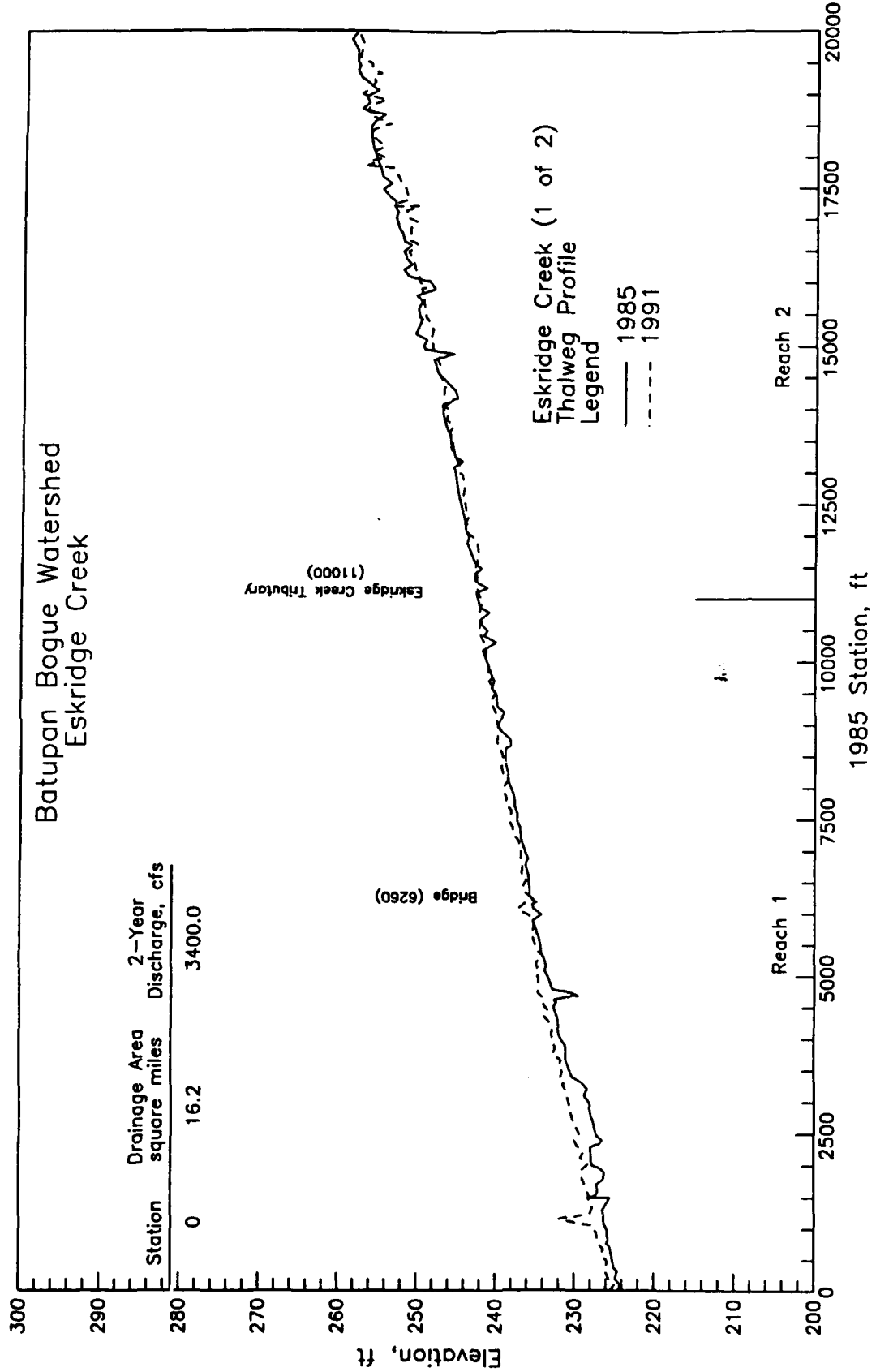


PLATE C10



Batupan Bogue Watershed Eskridge Creek

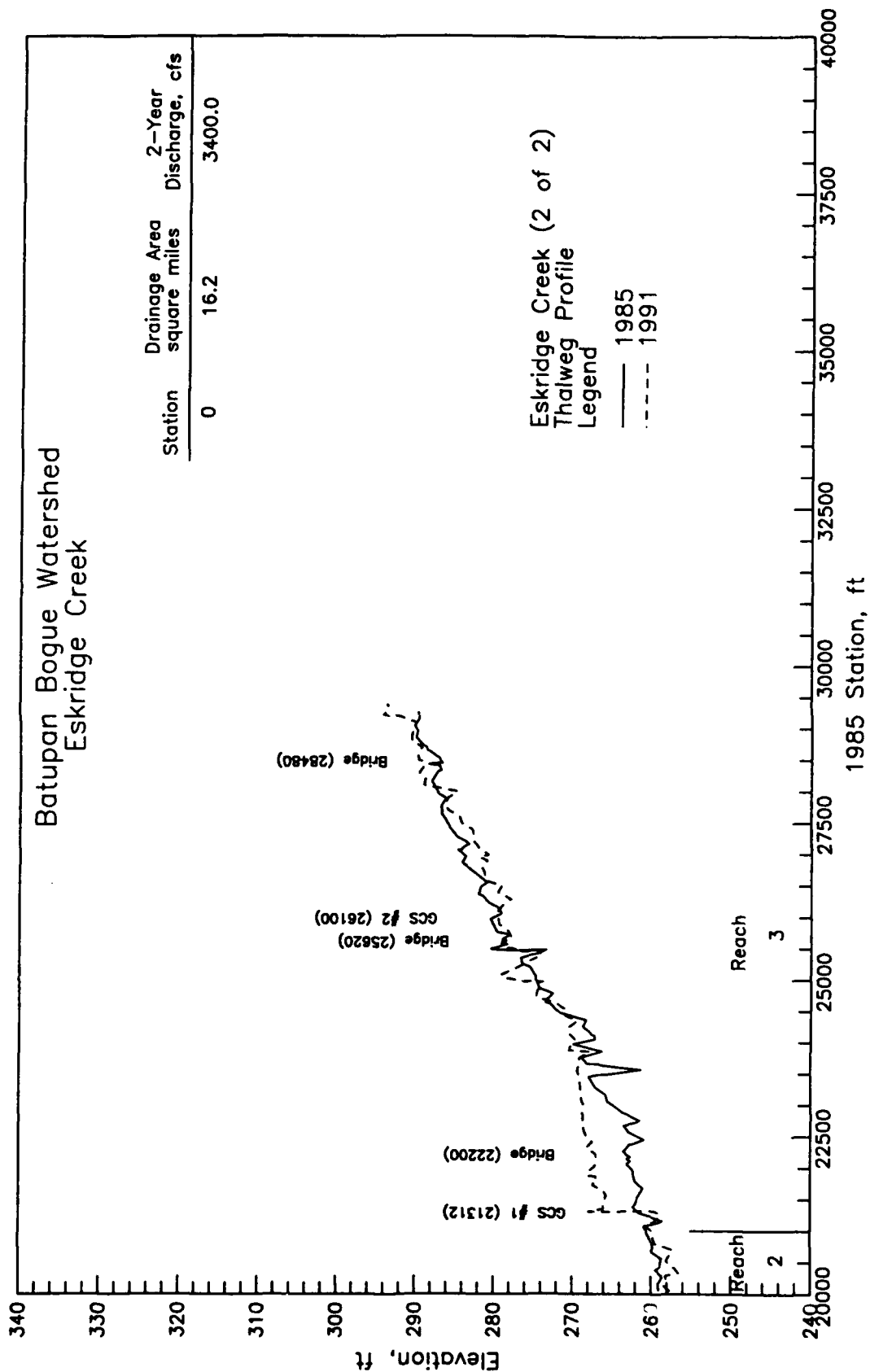
Station	Drainage Area square miles	2-Year Discharge, cfs
0	16.2	3400.0



Eskridge Creek (1 of 2)
Thalweg Profile
Legend
— 1985
--- 1991

Batupan Bogue Watershed Eskridge Creek

Station	Drainage Area square miles	2-Year Discharge, cfs
0	16.2	3400.0



Batupan Bogue Watershed Sykes Creek

Station	Drainage Area square miles	2-Year Discharge, cfs
0	16.8	3100.0

Bridge (16660)

RR Bridge (7030)
Hwy 51 Bridge (7160)

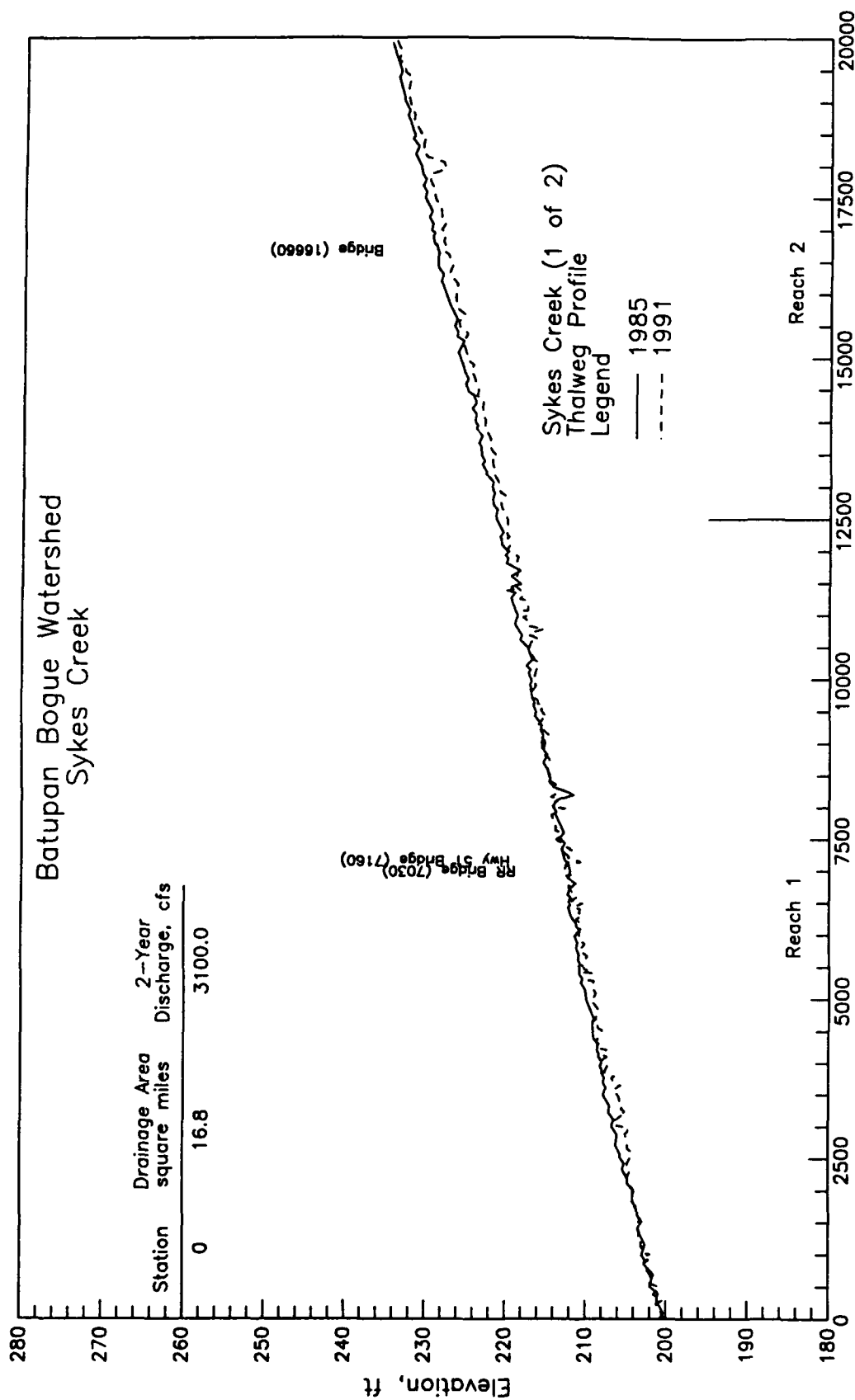
Sykes Creek (1 of 2)
Thalweg Profile
Legend

— 1985
--- 1991

Reach 1

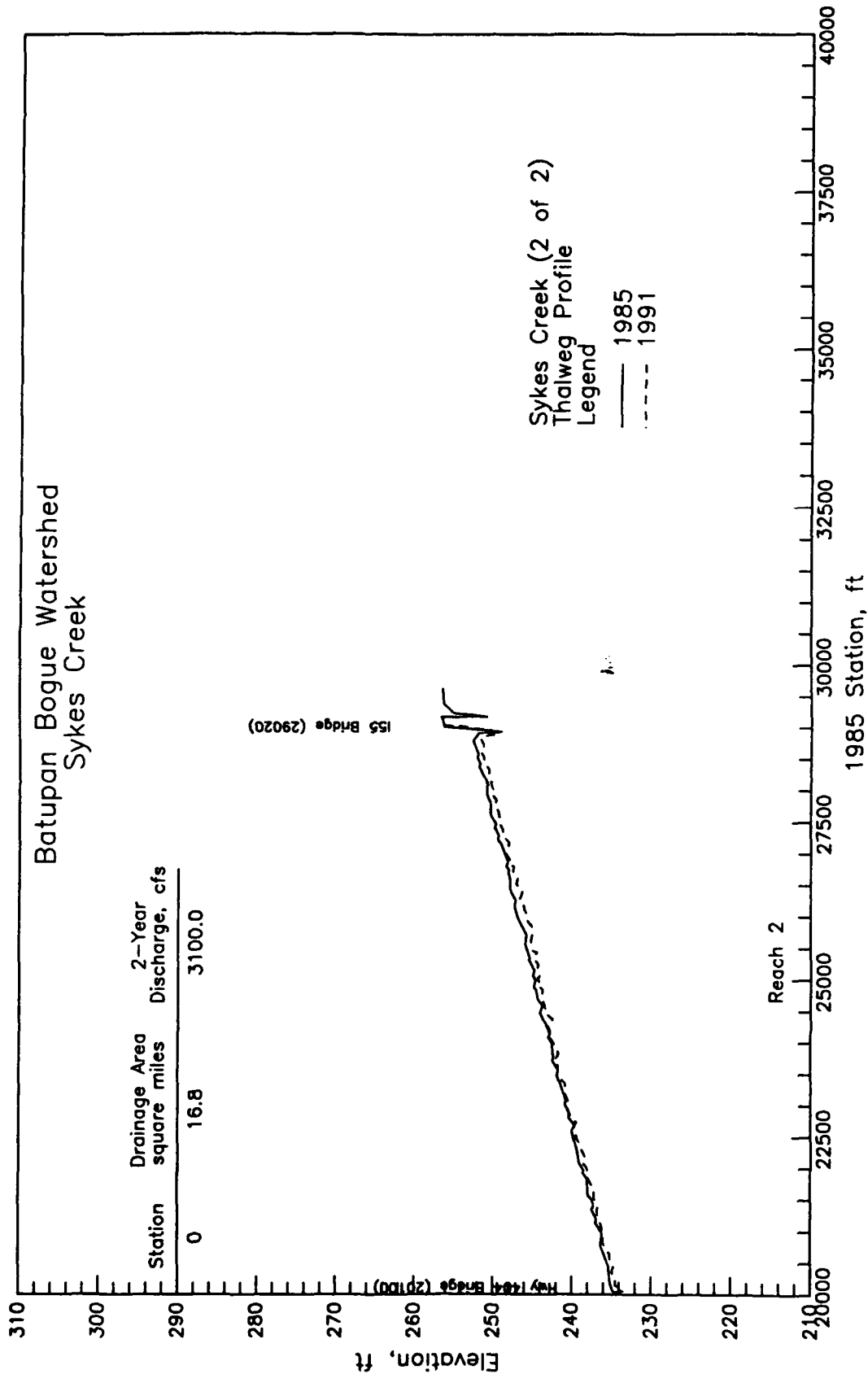
Reach 2

1985 Station, ft



Batupan Bogue Watershed Sykes Creek

Station	Drainage Area square miles	2-Year Discharge, cfs
0	16.8	3100.0



Sykes Creek (2 of 2)
Thalweg Profile
Legend
— 1985
--- 1991

Reach 2

1985 Station, ft

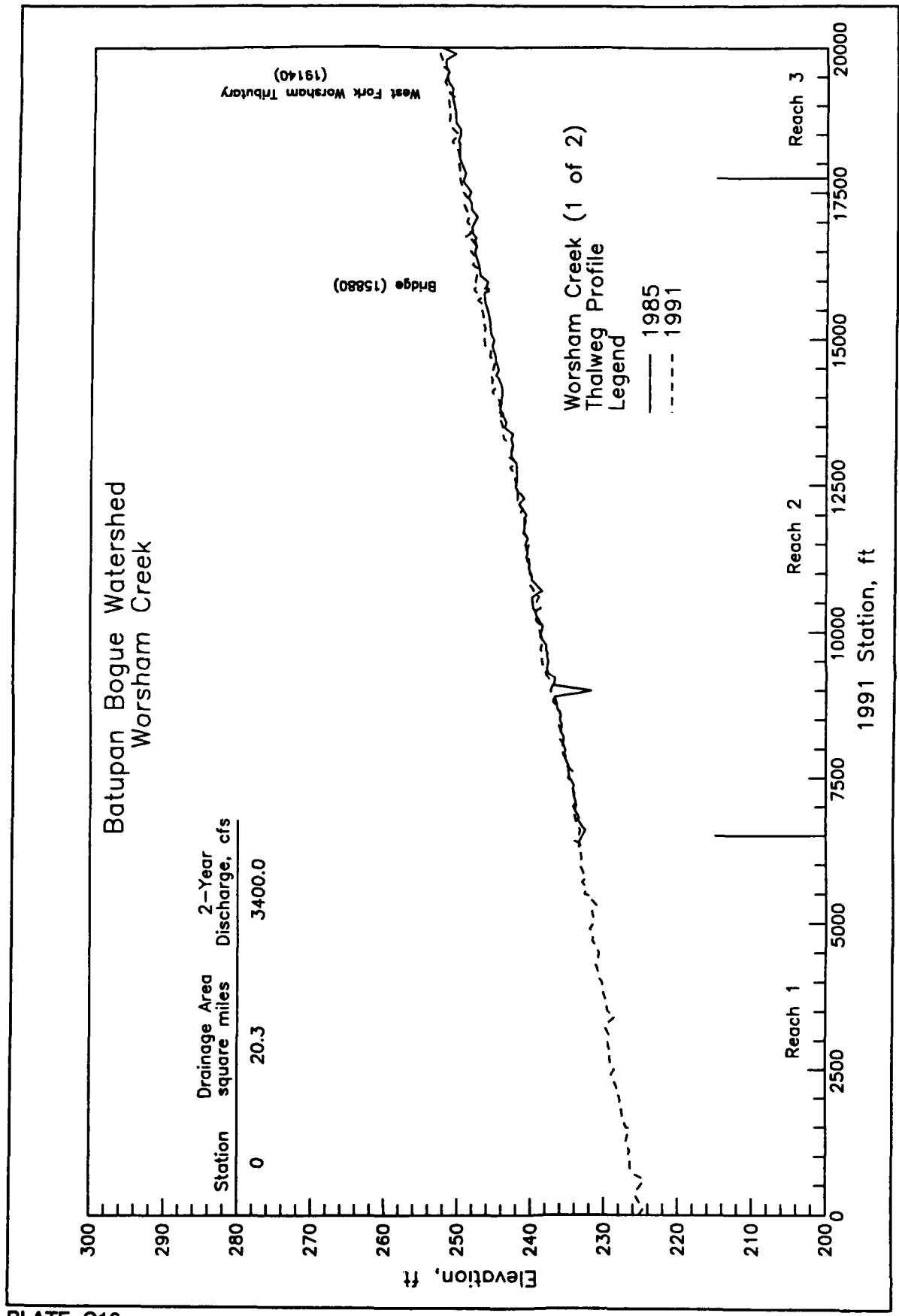
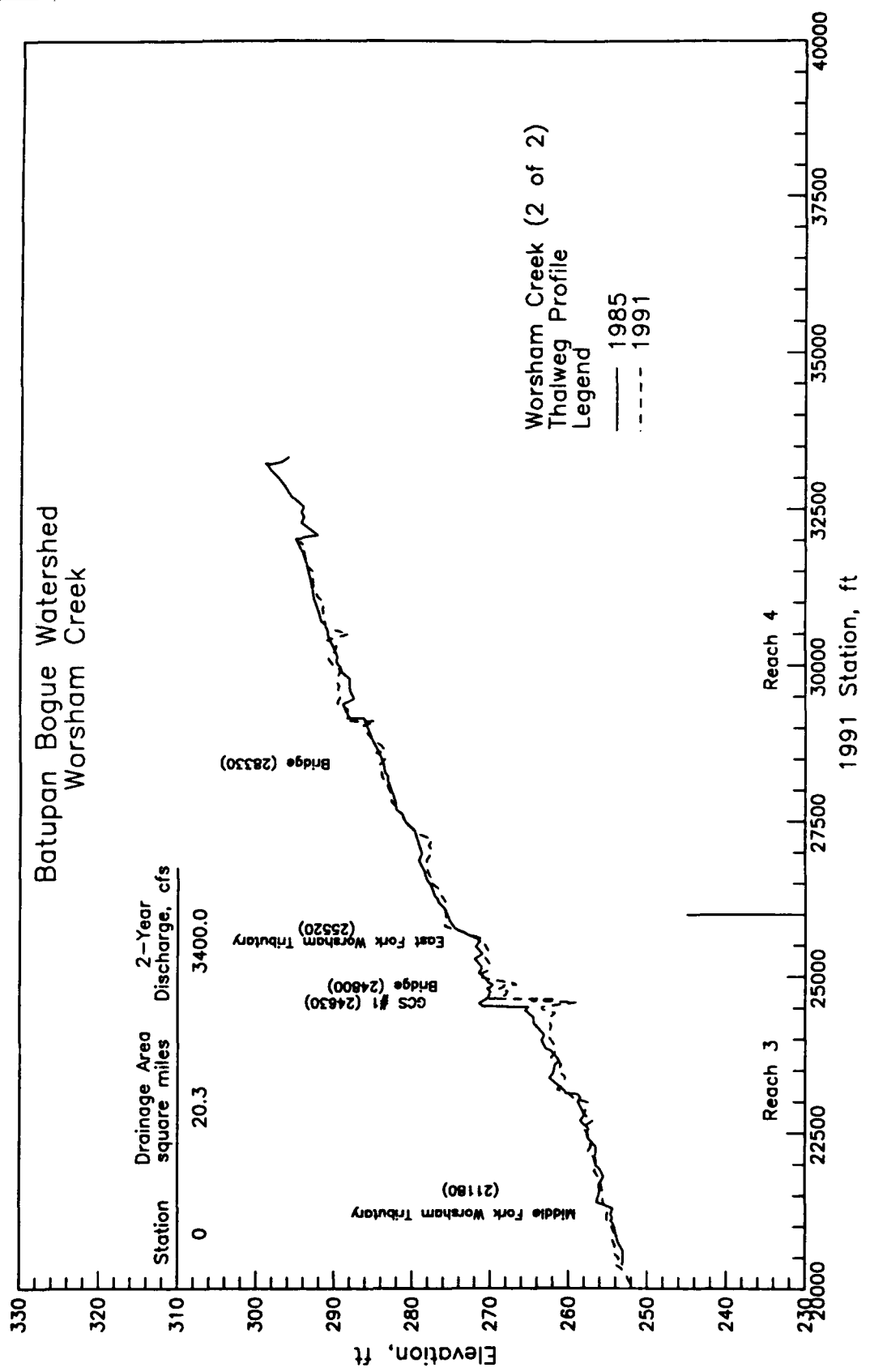
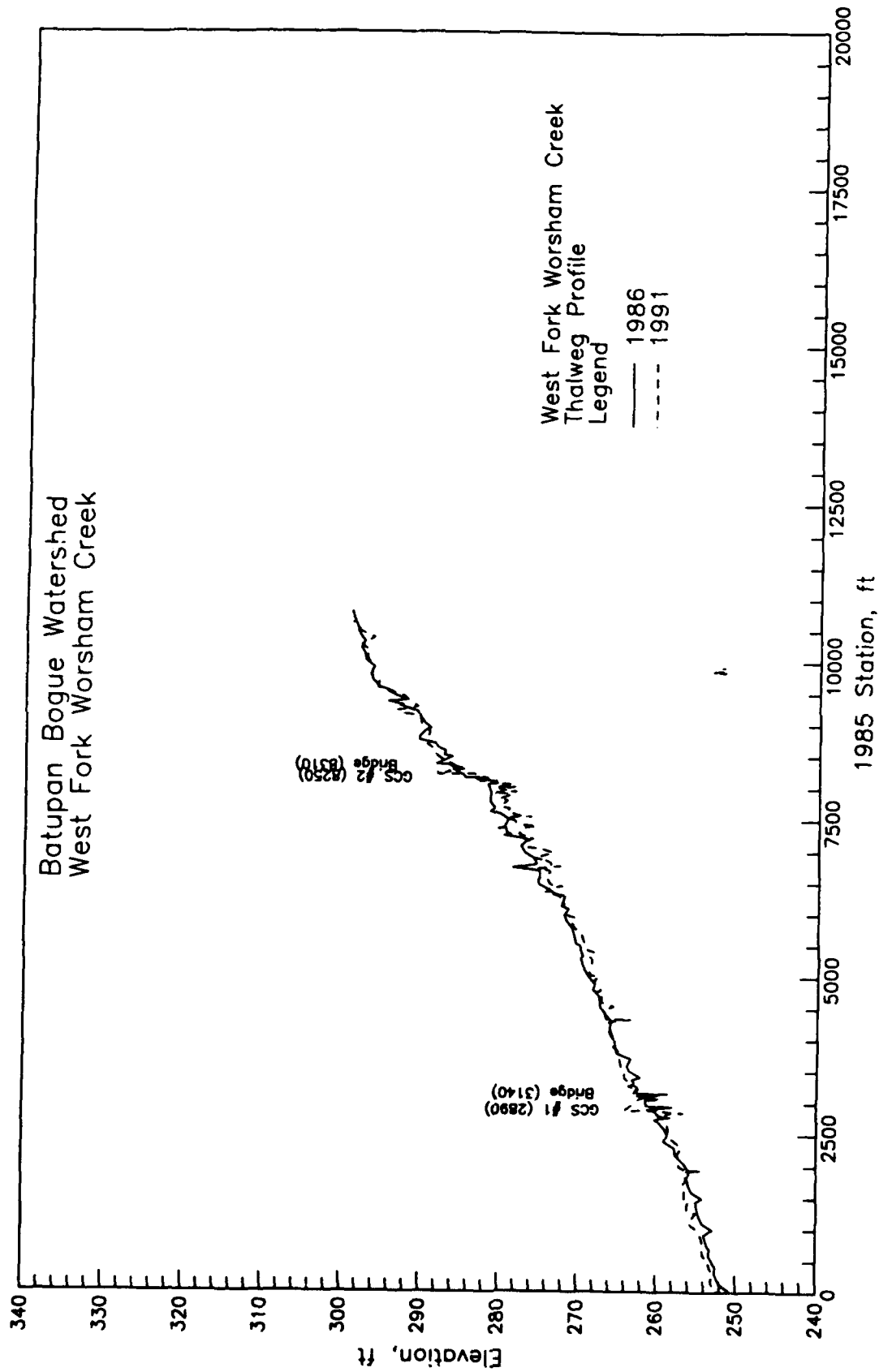


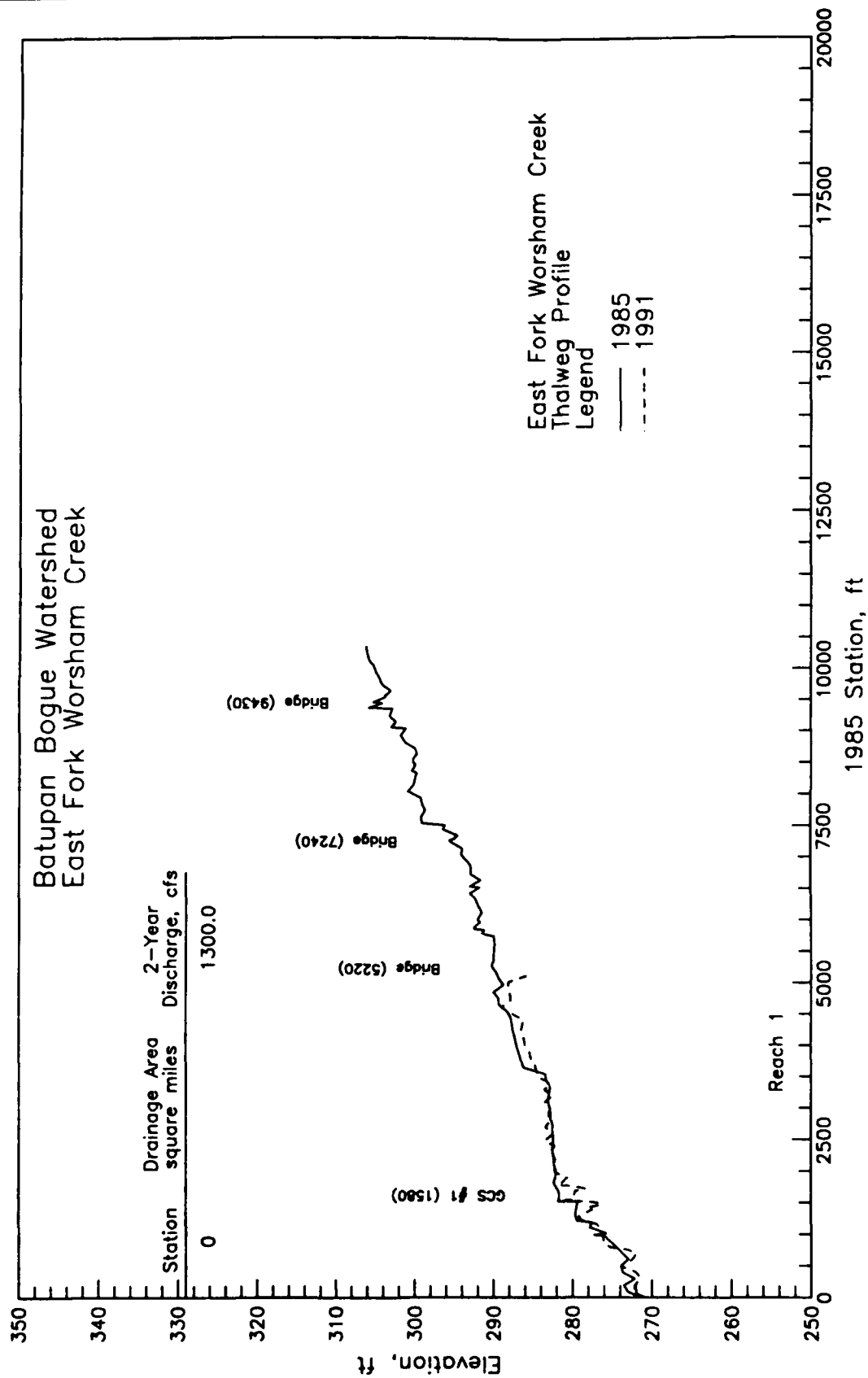
PLATE C16



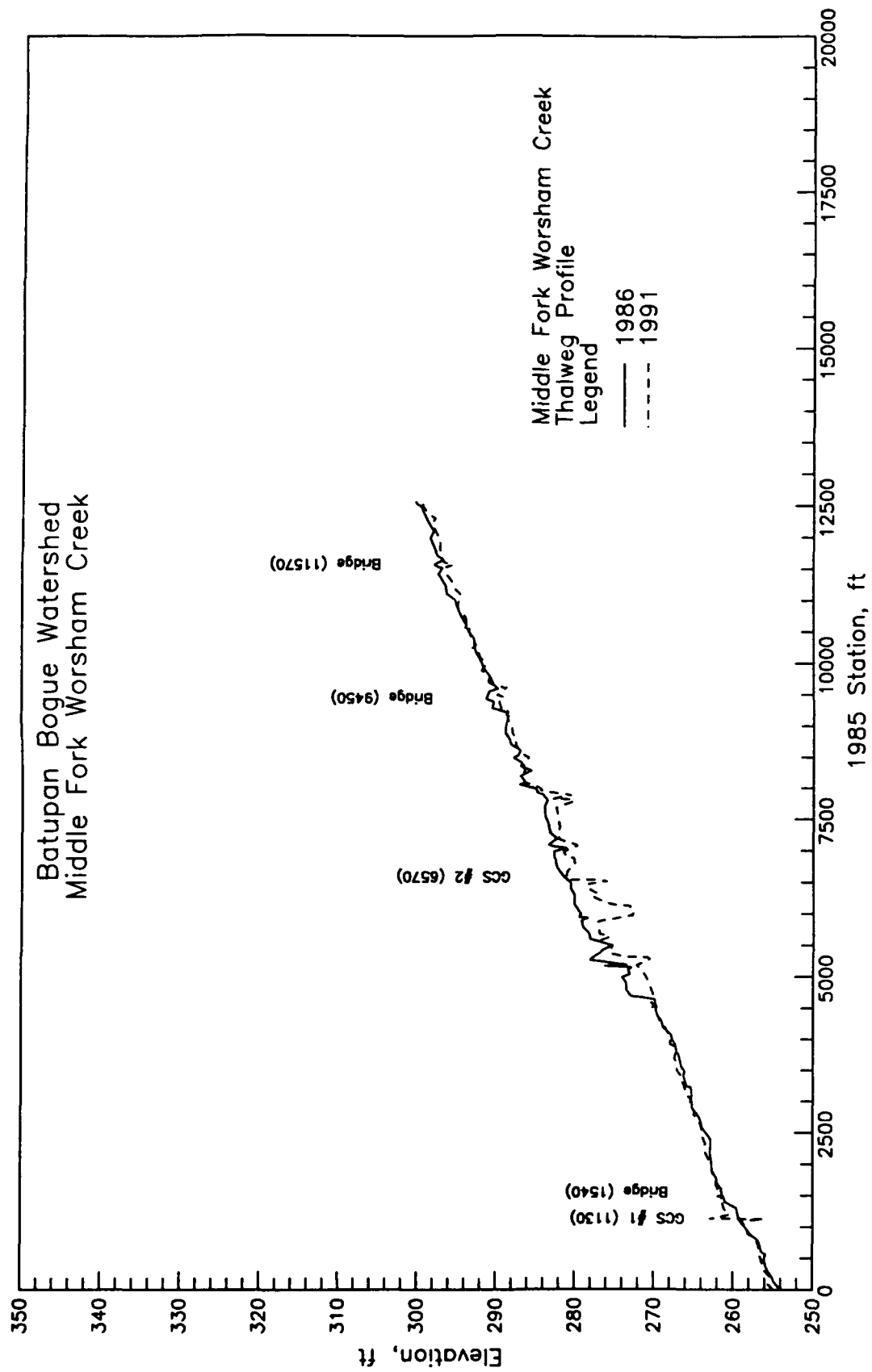
Batupan Bogue Watershed
West Fork Worsham Creek



Batupan Bogue Watershed East Fork Worsham Creek



Batupan Bogue Watershed
Middle Fork Worsham Creek



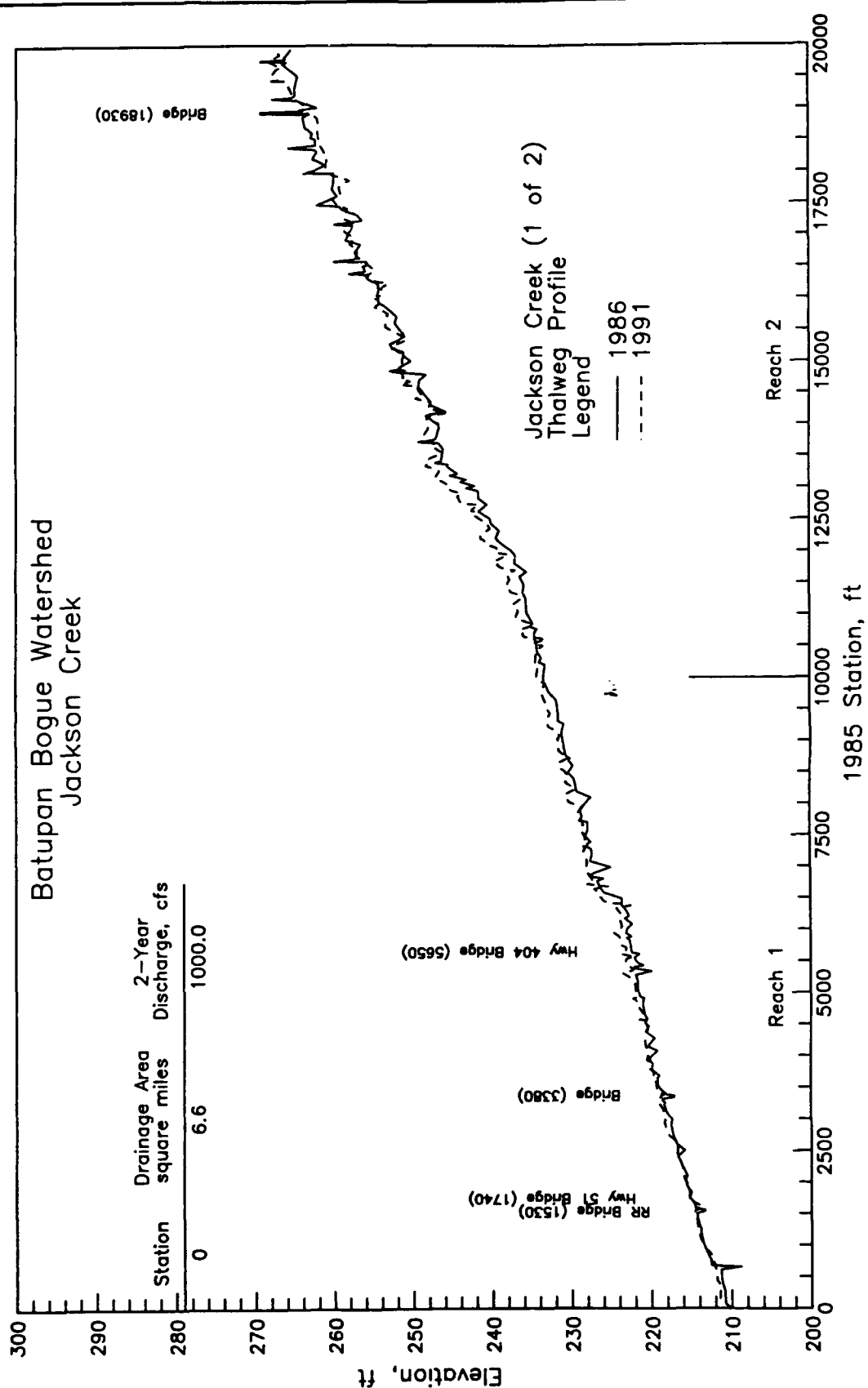
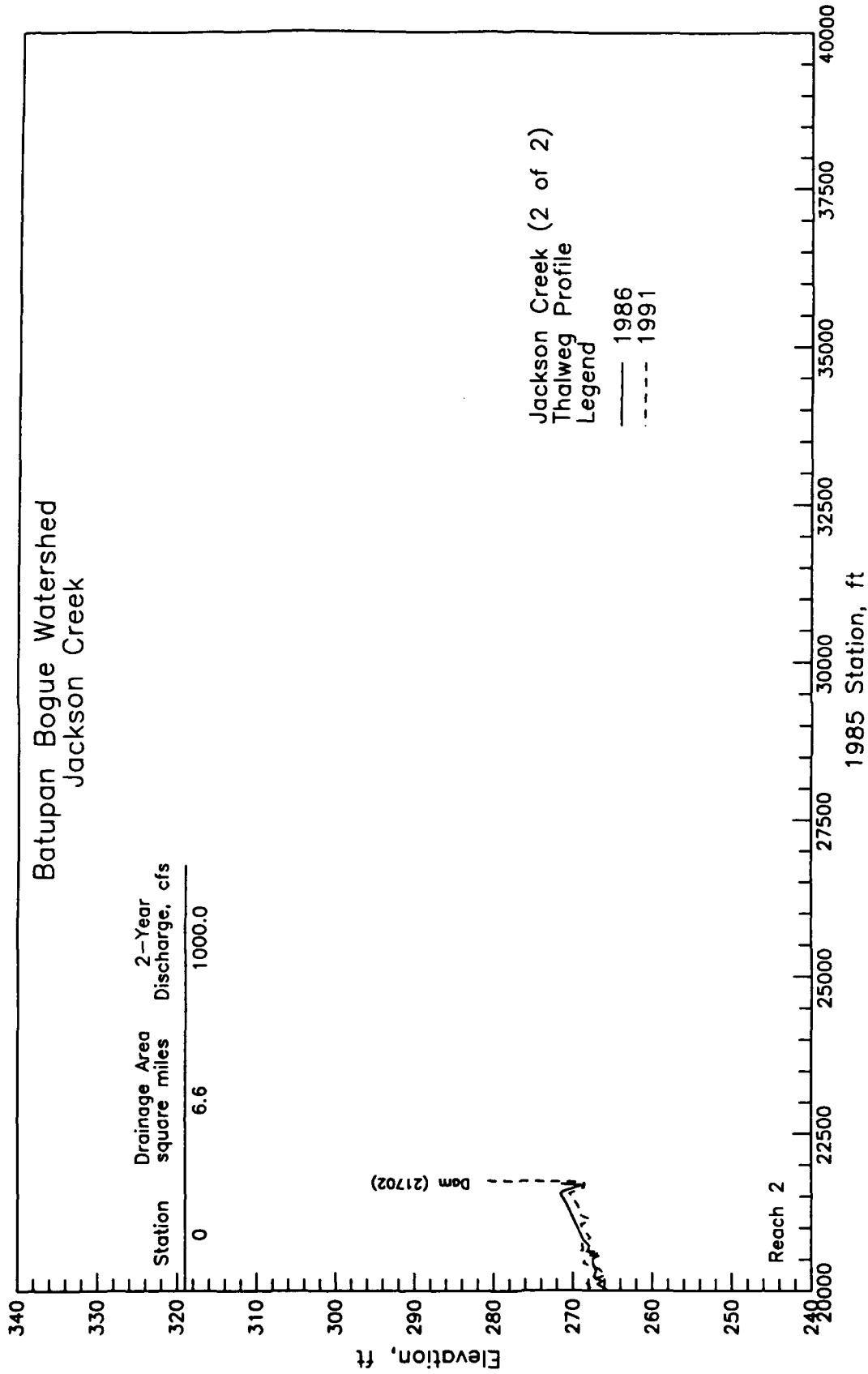
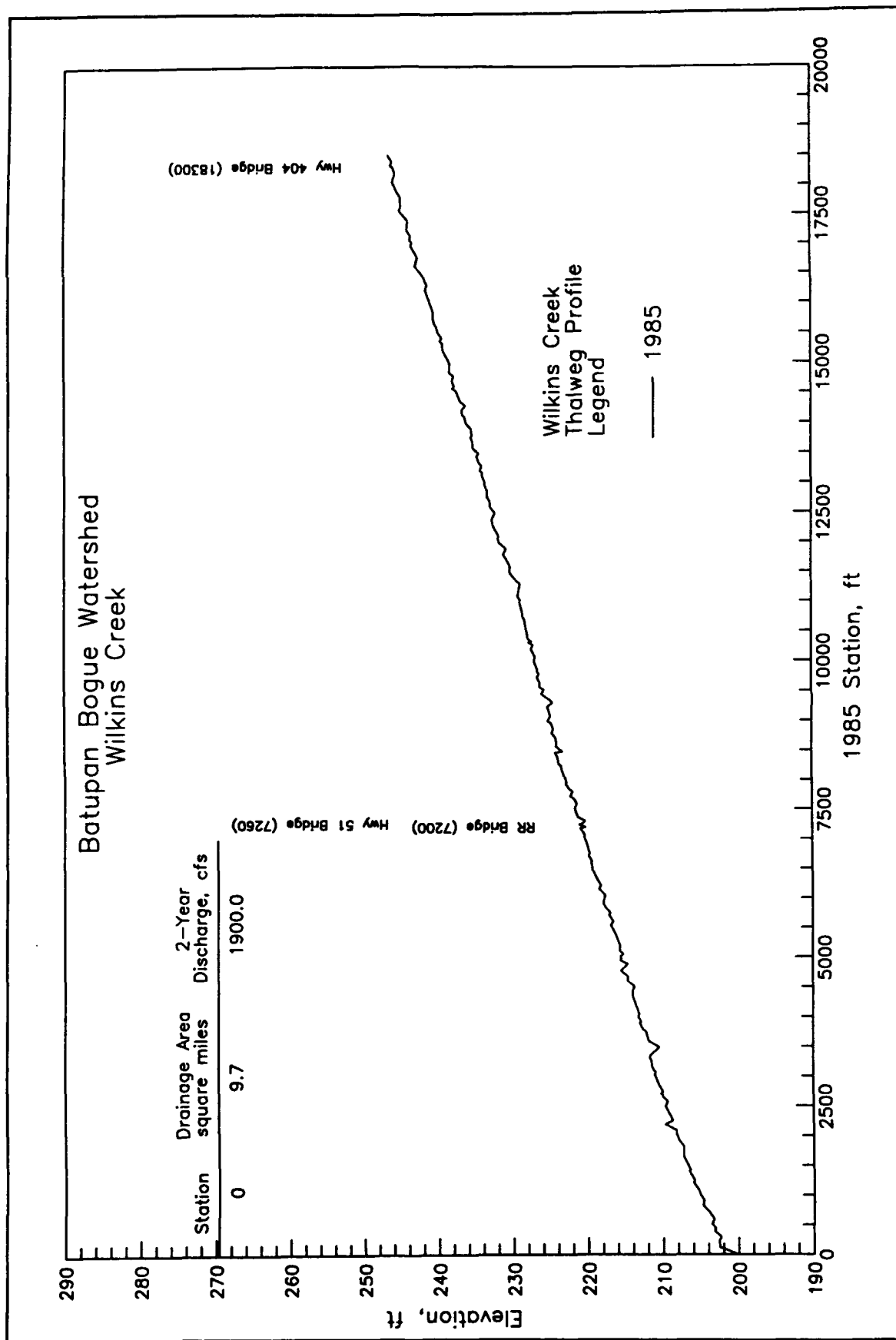


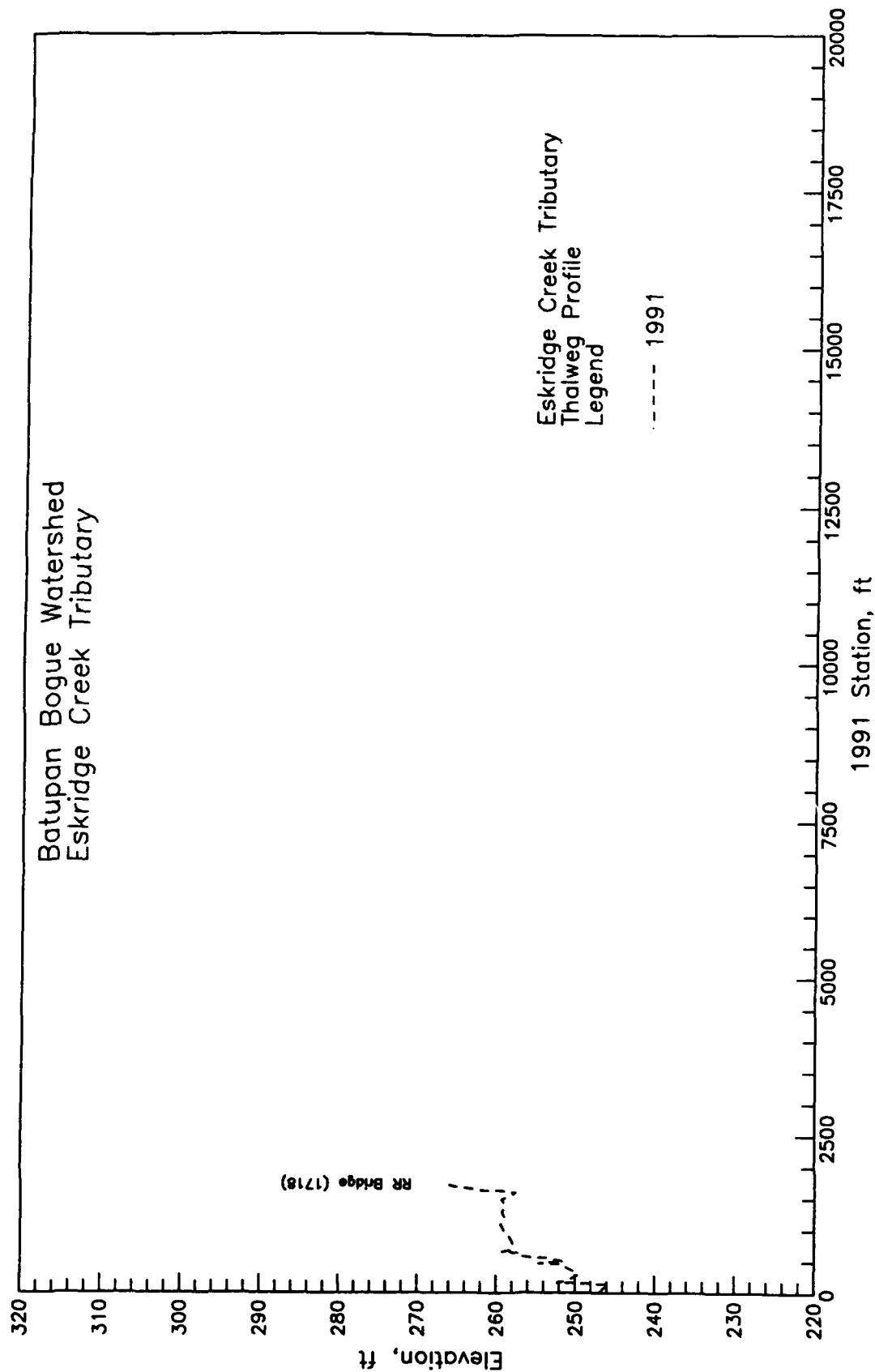
PLATE C21

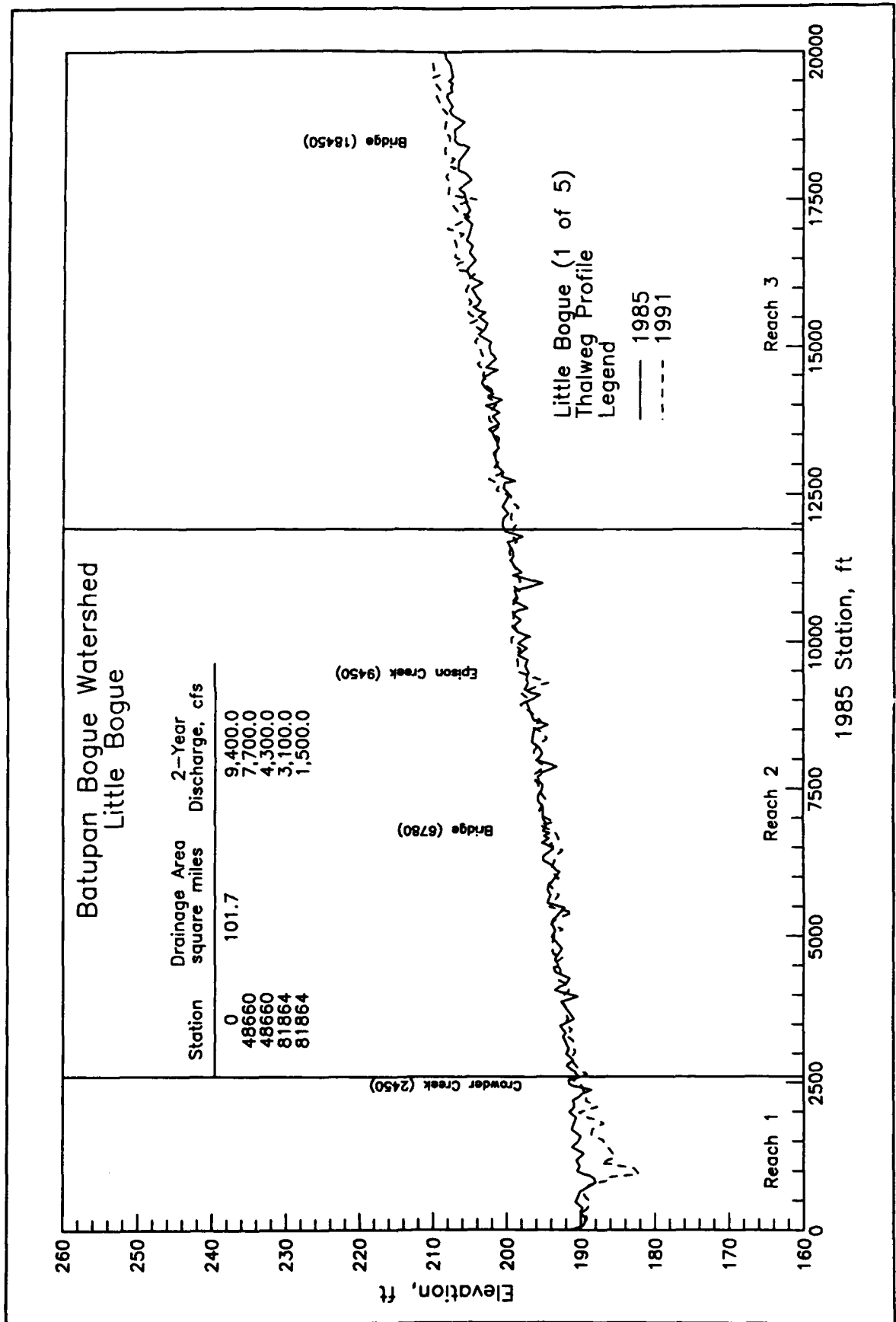
Batupan Bogue Watershed Jackson Creek





Batupan Bogue Watershed
Eskridge Creek Tributary

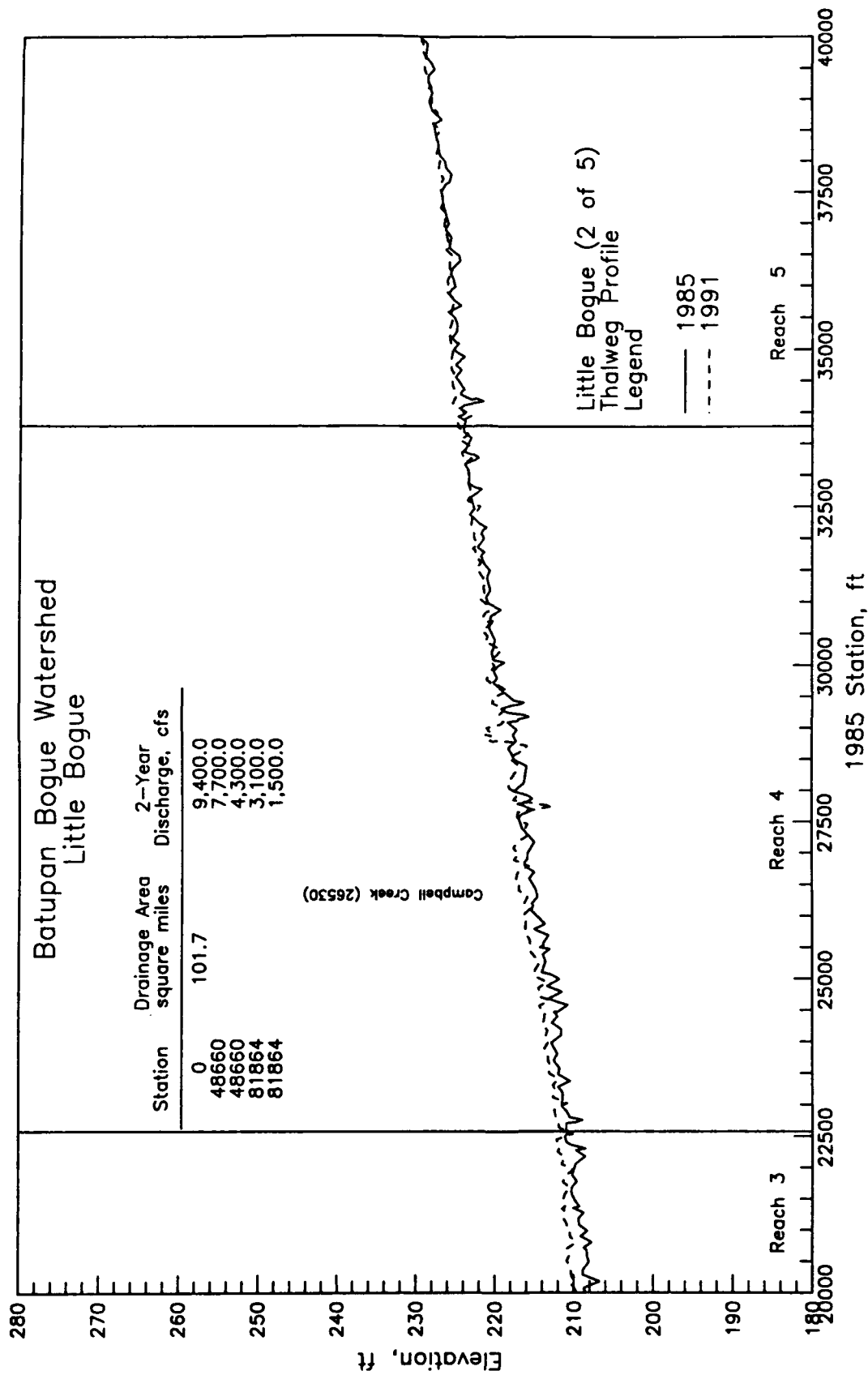




Batupan Bogue Watershed Little Bogue

Station	Drainage Area square miles	2-Year Discharge, cfs
0	101.7	9,400.0
48660		7,700.0
48660		4,300.0
81864		3,100.0
81864		1,500.0

Campbell Creek (26530)



Little Bogue (2 of 5)
Thalweg Profile
Legend

— 1985
- - - 1991

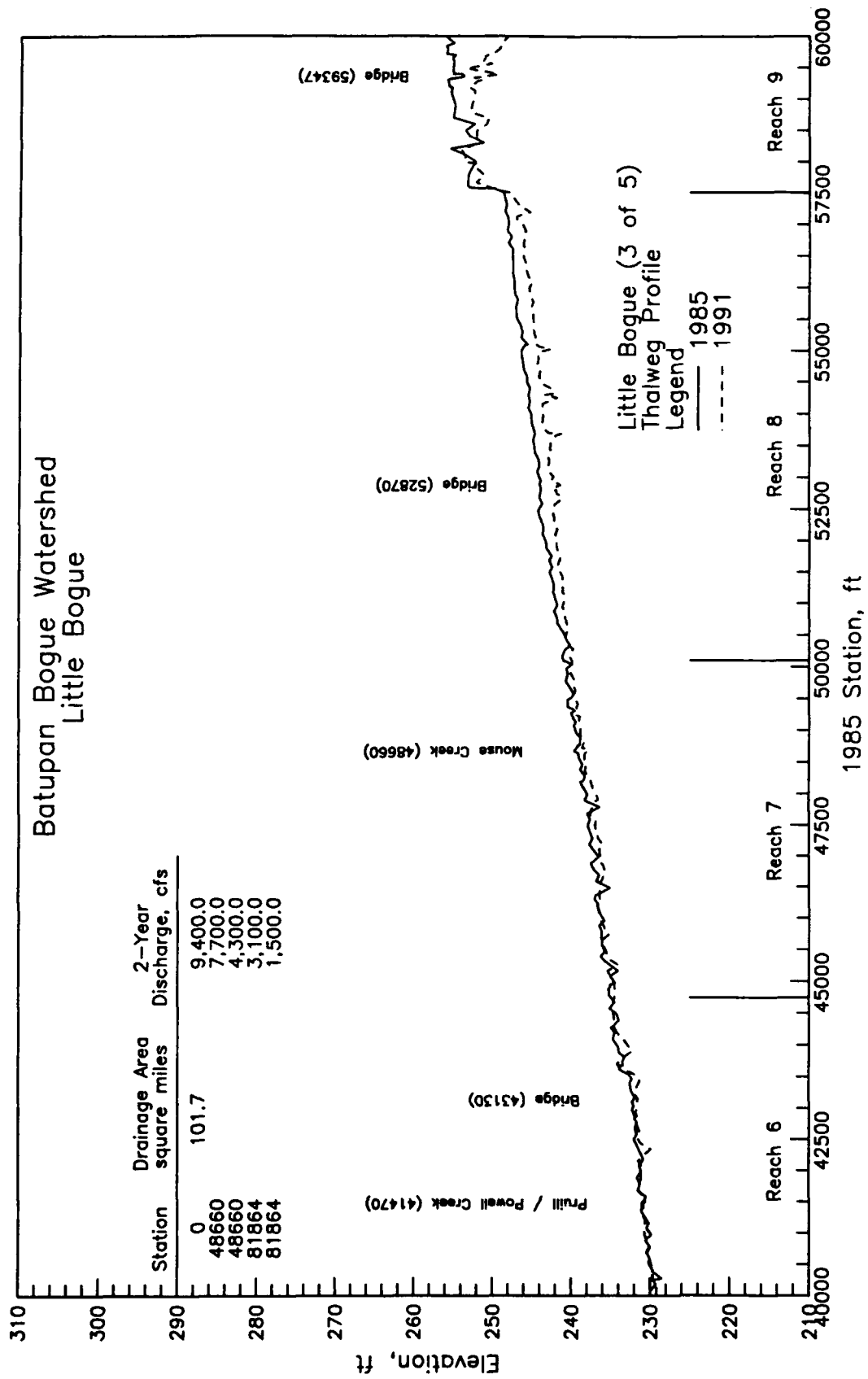
Reach 5

Reach 4

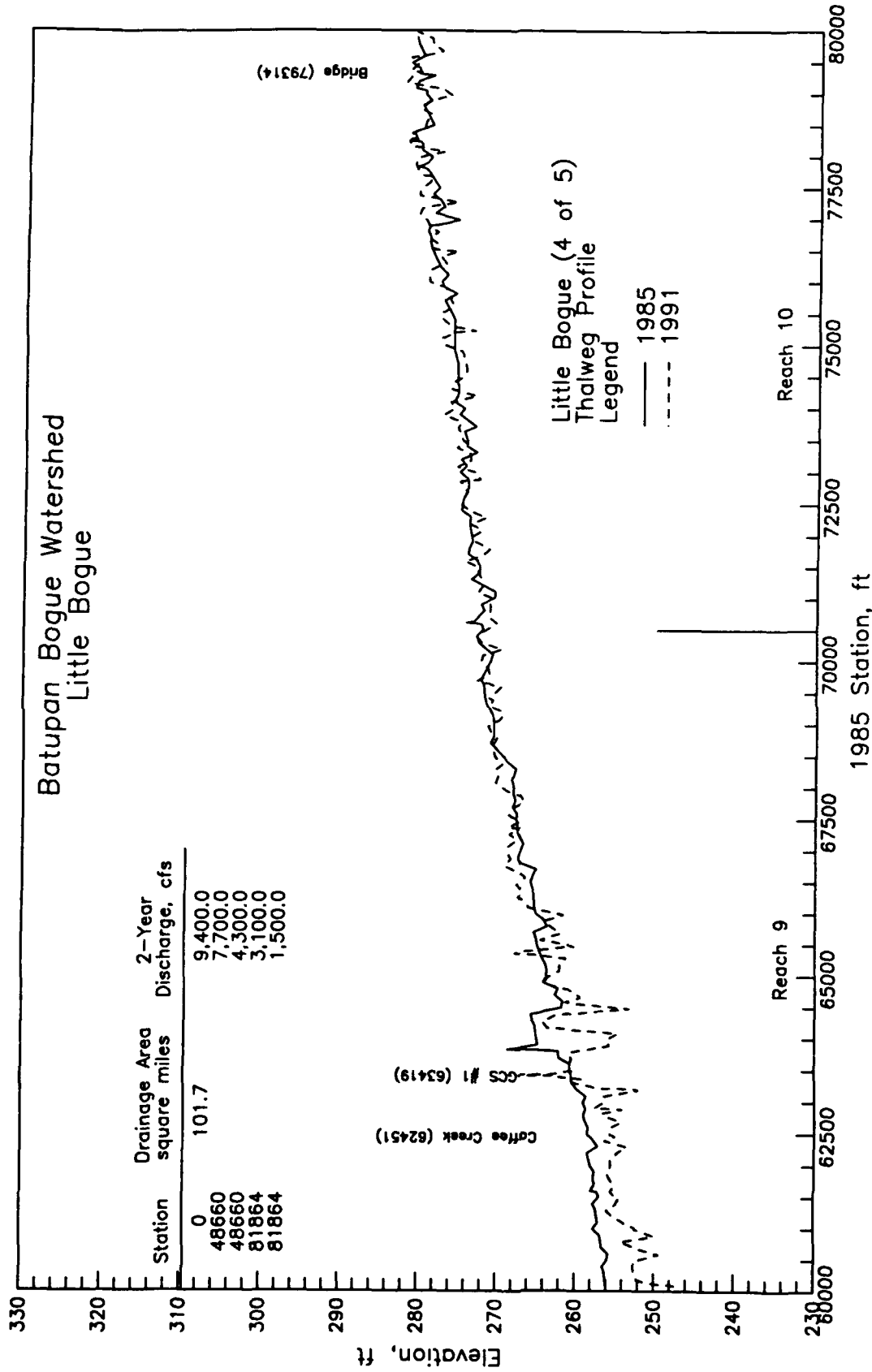
Reach 3

1985 Station, ft

Batupan Bogue Watershed Little Bogue



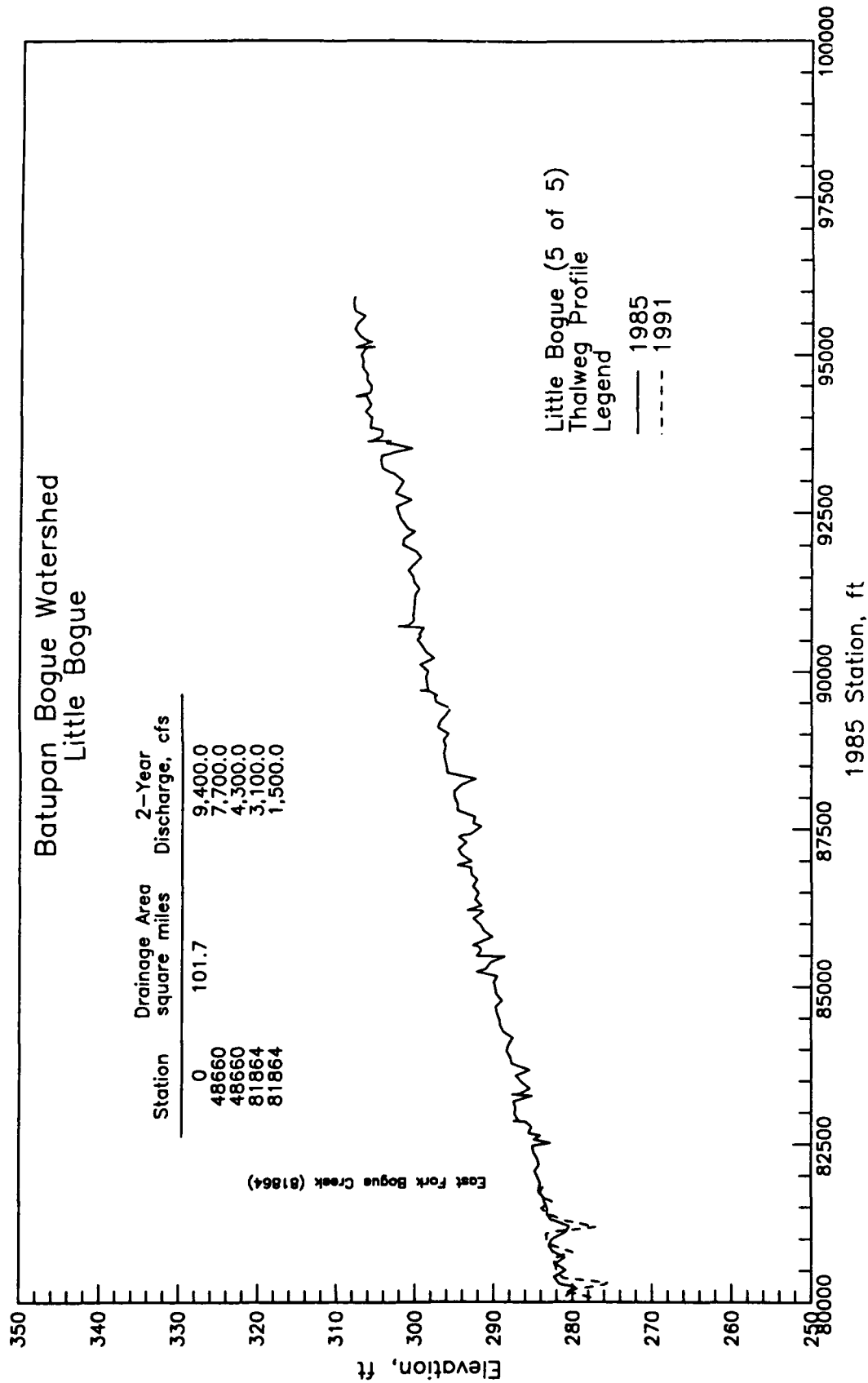
Batupan Bogue Watershed Little Bogue



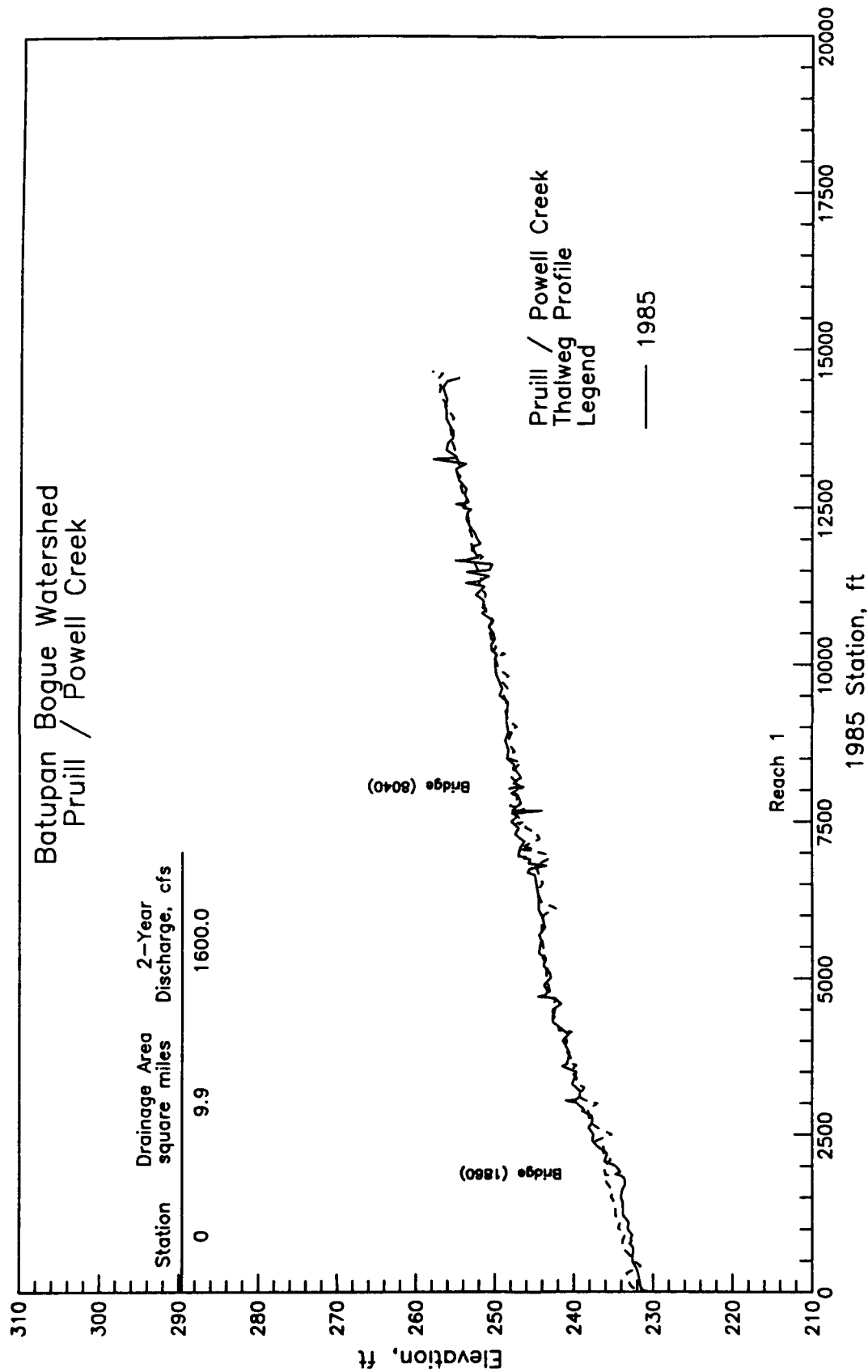
Batupan Bogue Watershed Little Bogue

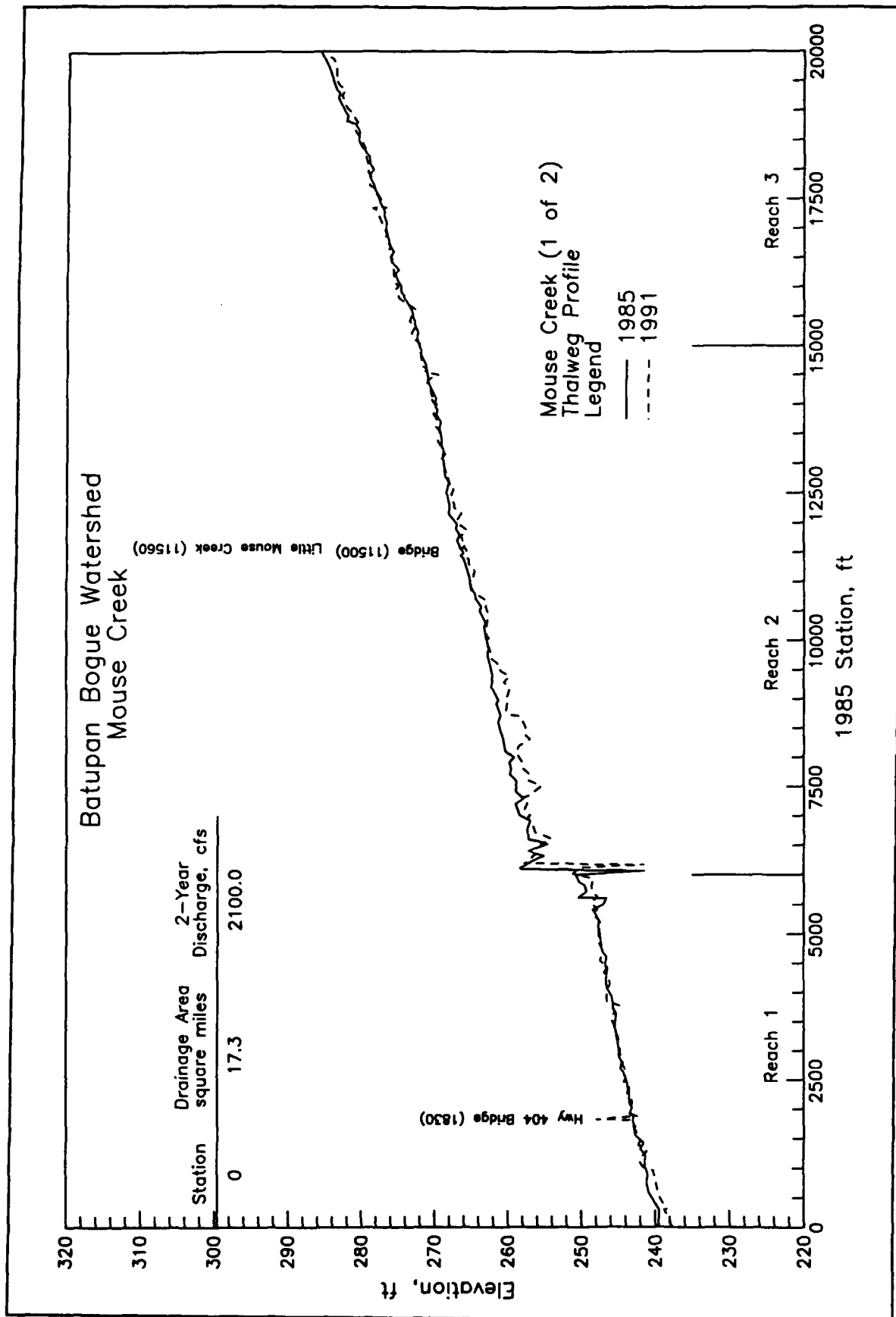
Station	Drainage Area square miles	2-Year Discharge, cfs
0	101.7	9,400.0
48660		7,700.0
48660		4,300.0
81864		3,100.0
81864		1,500.0

East Fork Bogue Creek (81864)

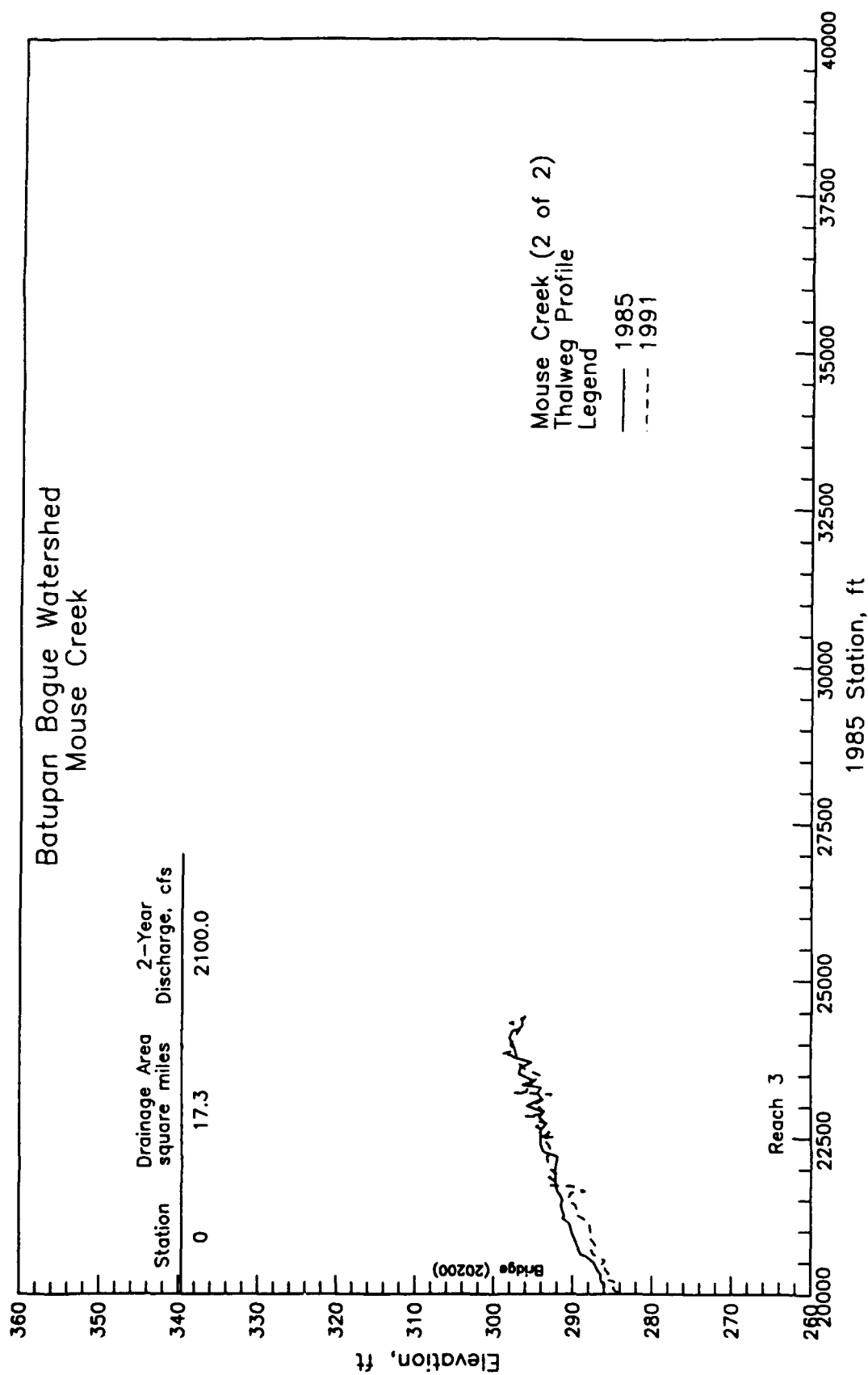


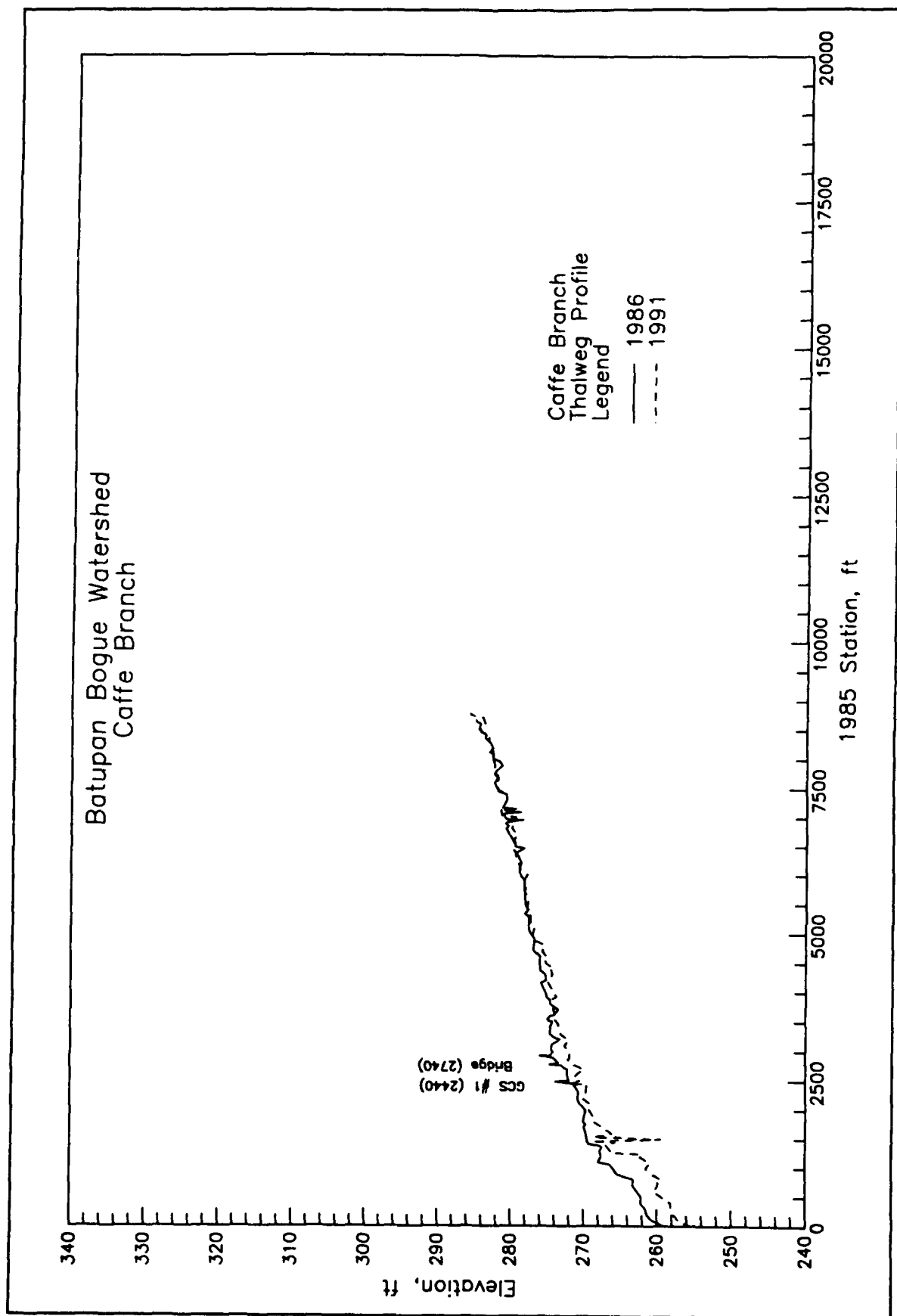
Batupan Bogue Watershed Pruill / Powell Creek



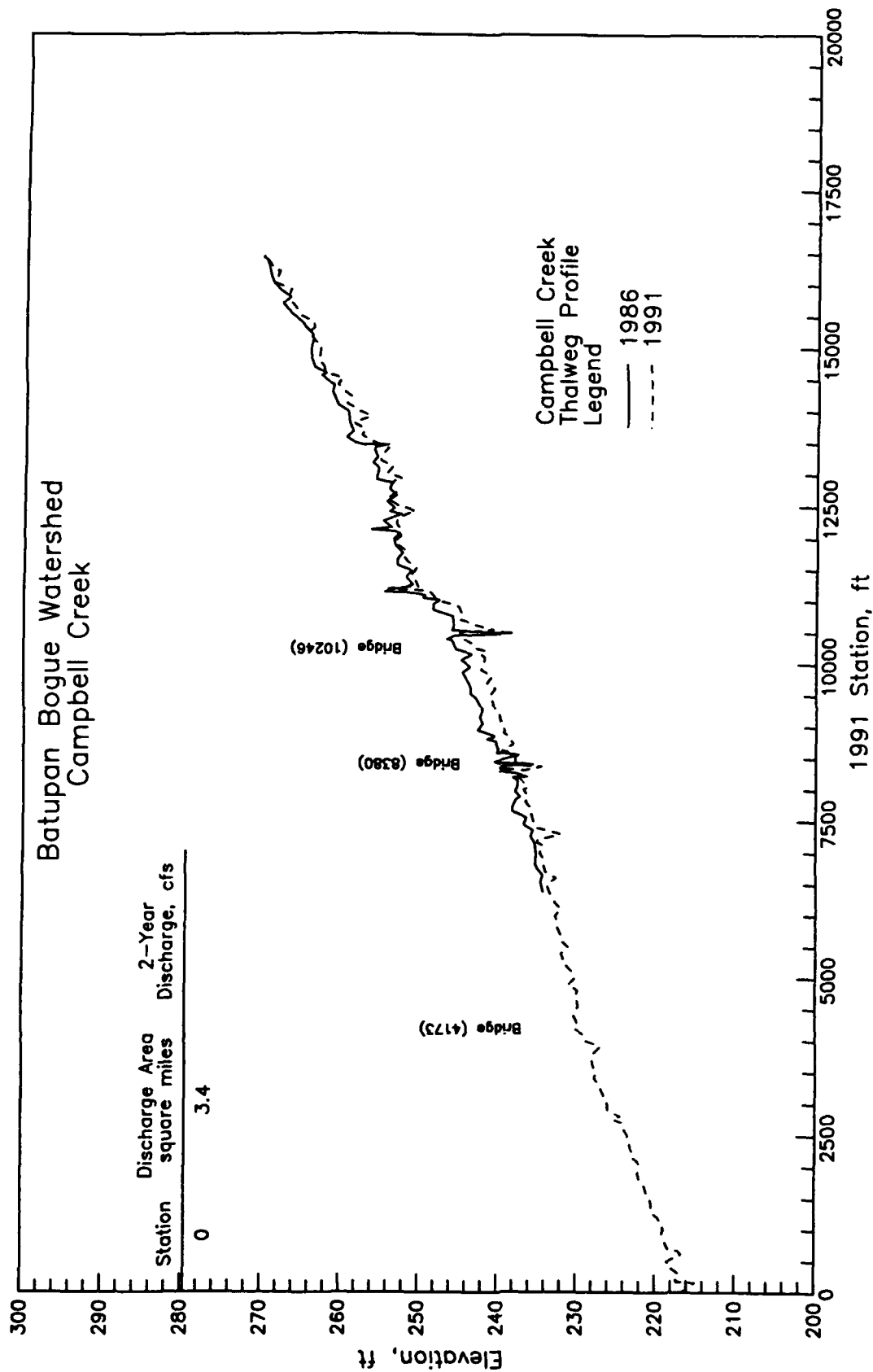


Batupan Bogue Watershed Mouse Creek

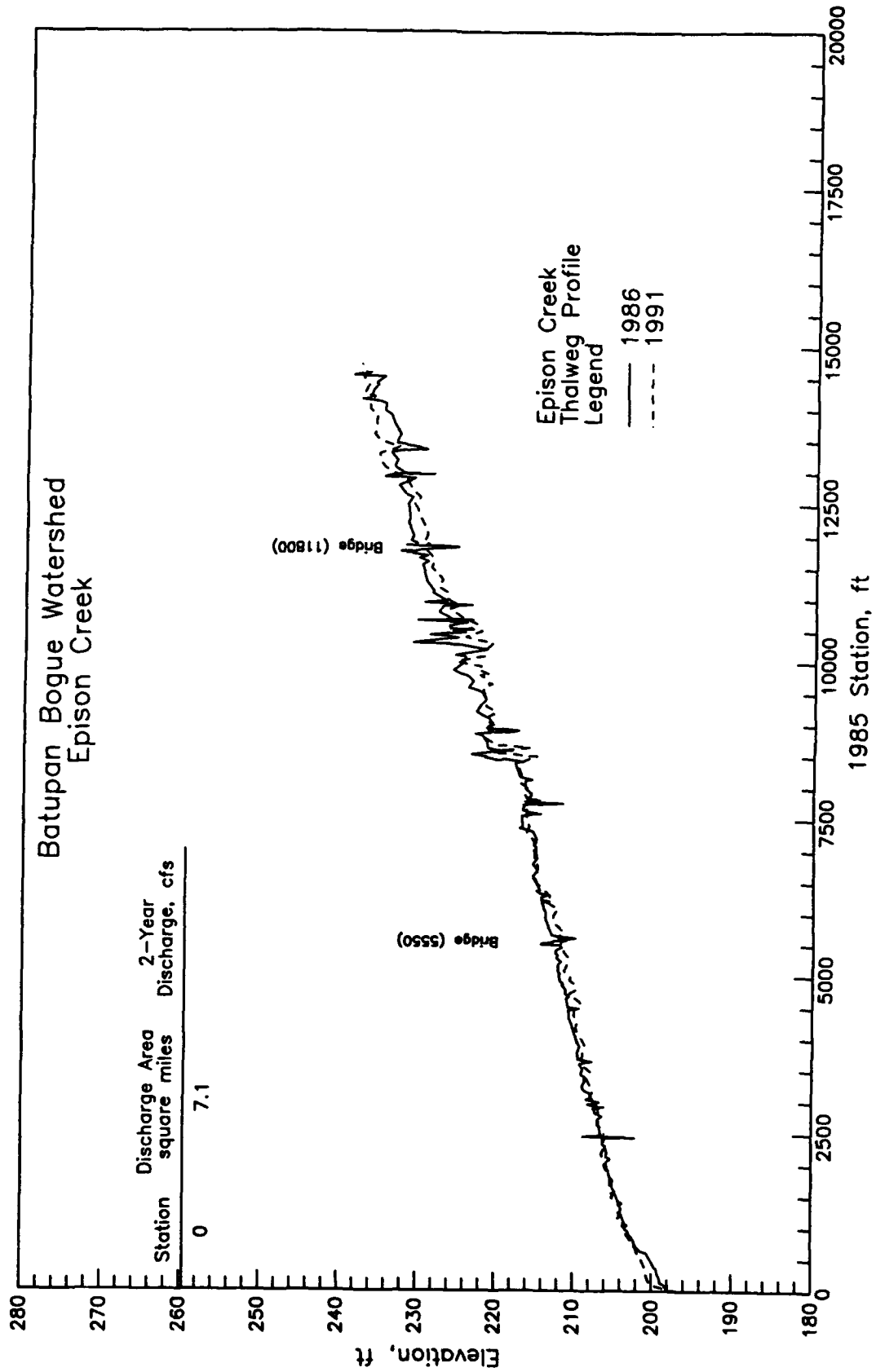




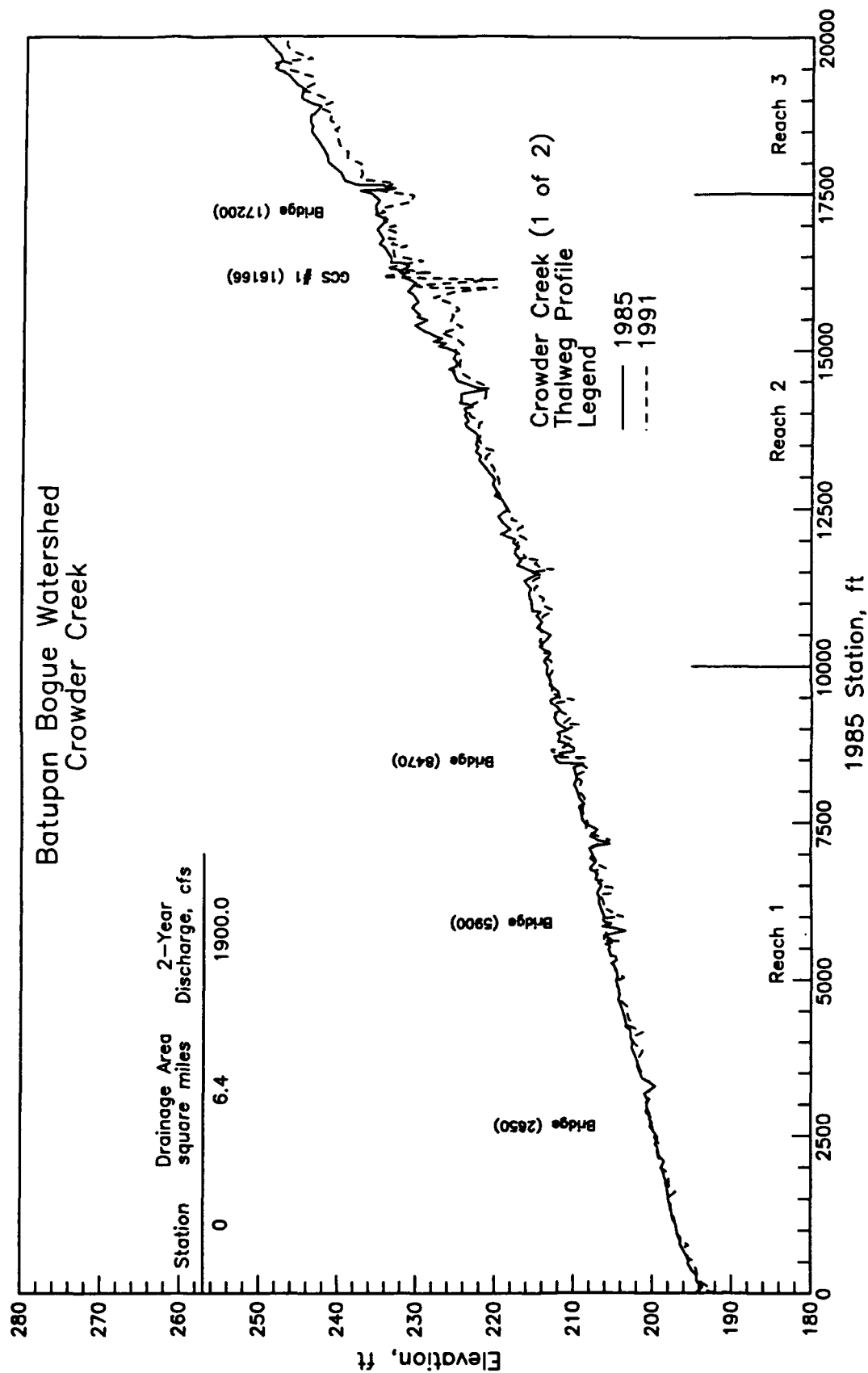
Batupan Bogue Watershed Campbell Creek



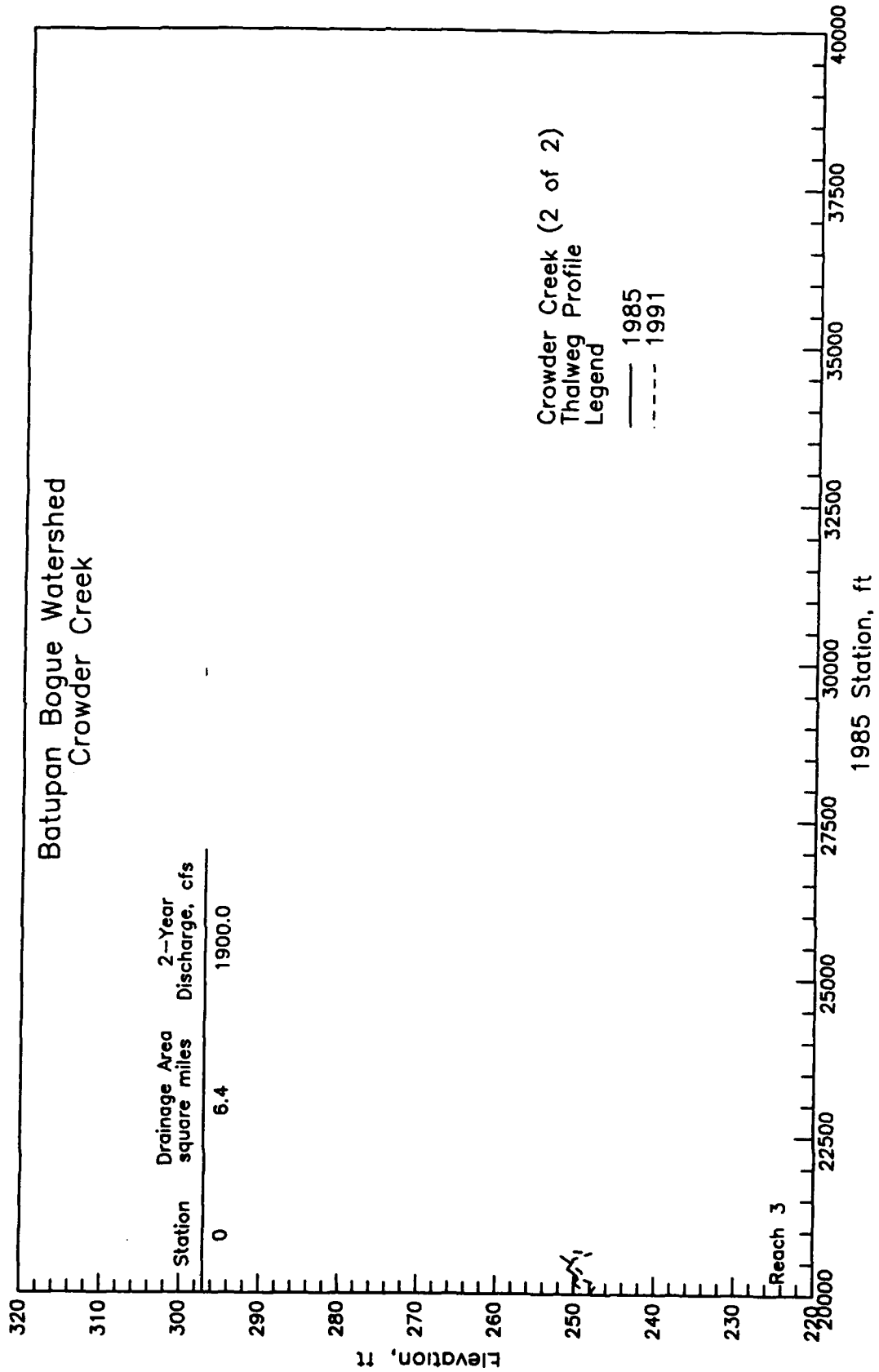
Batupan Bogue Watershed
Epison Creek



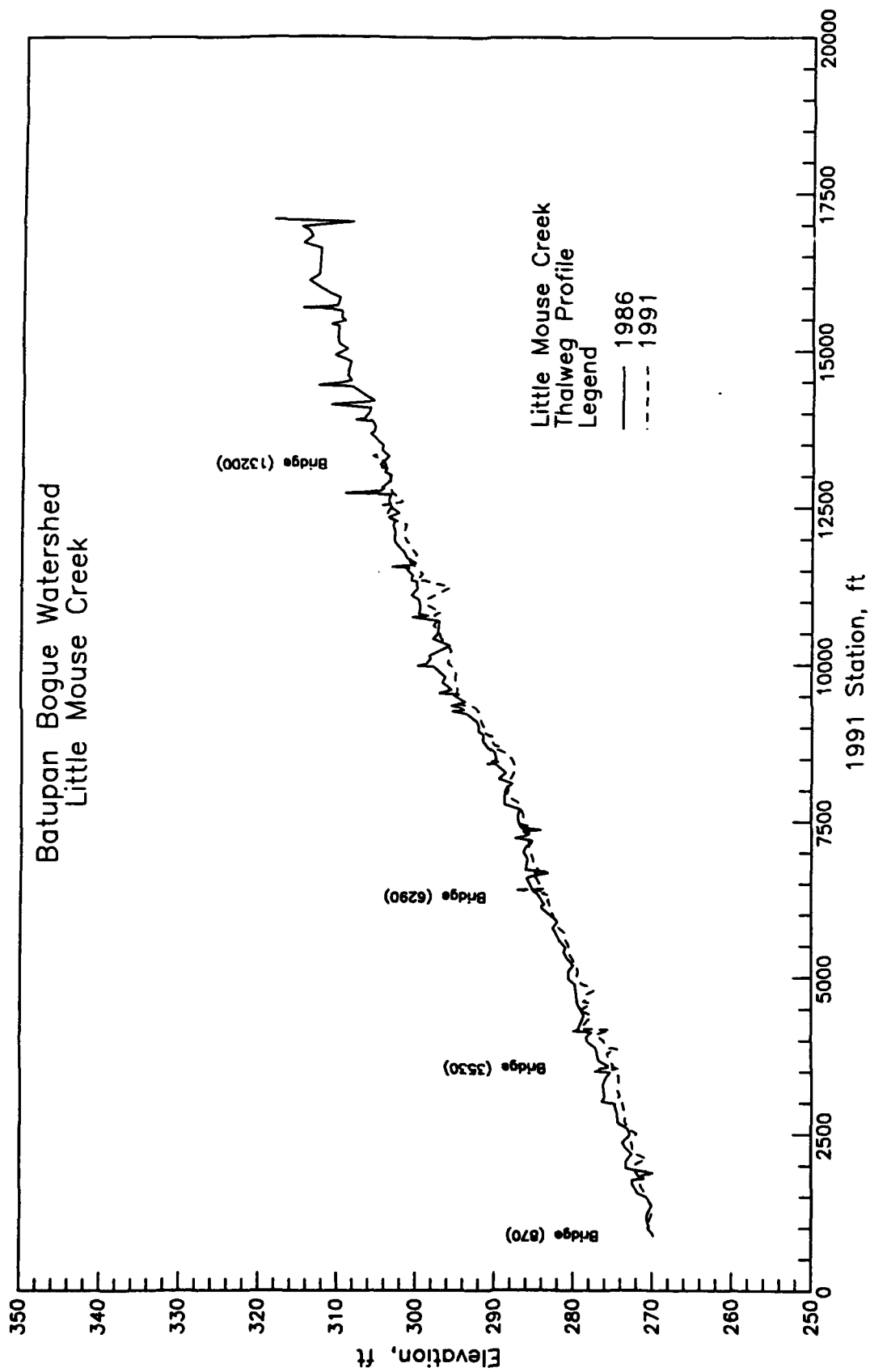
Batupan Bogue Watershed Crowder Creek

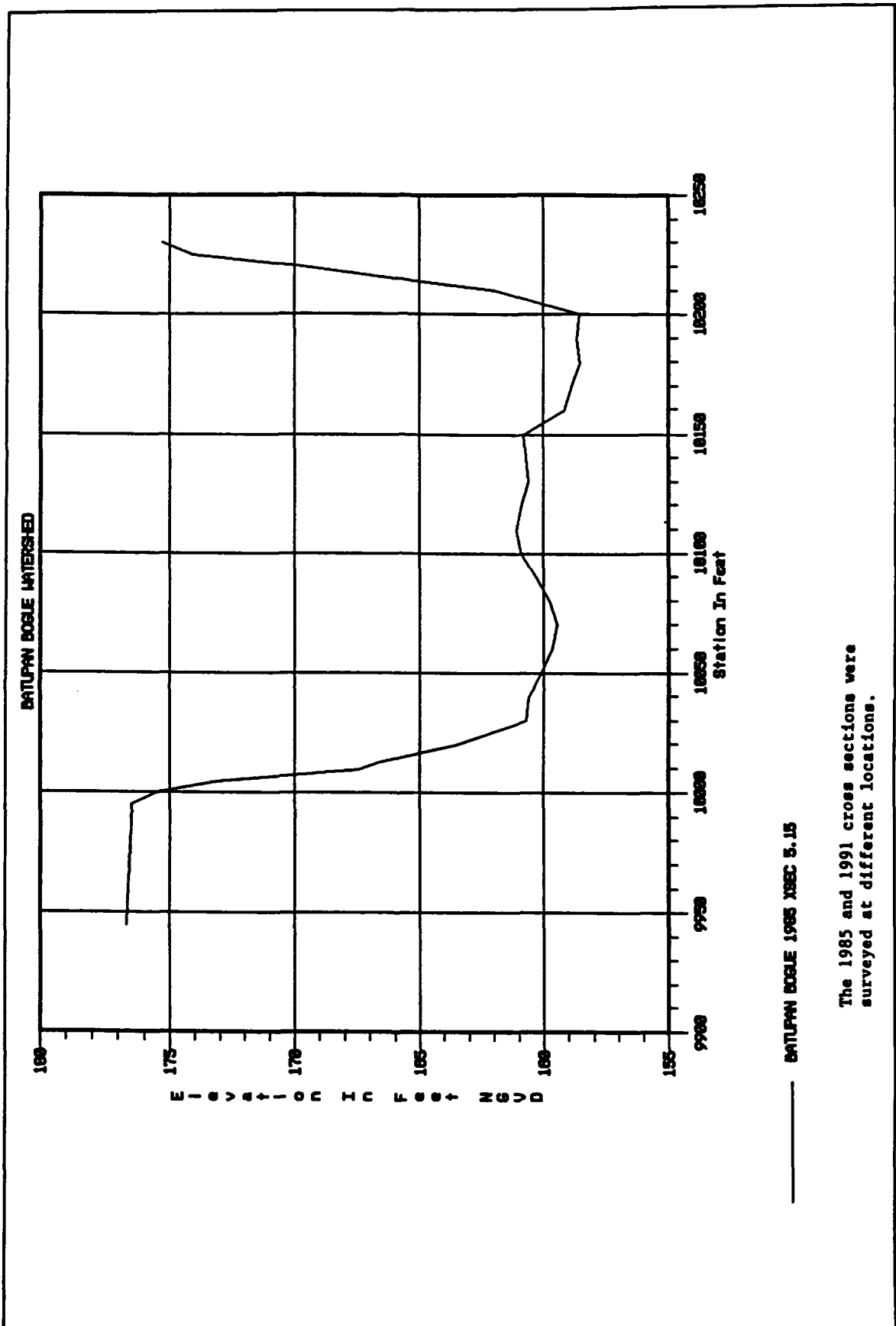


Batupan Bogue Watershed Crowder Creek

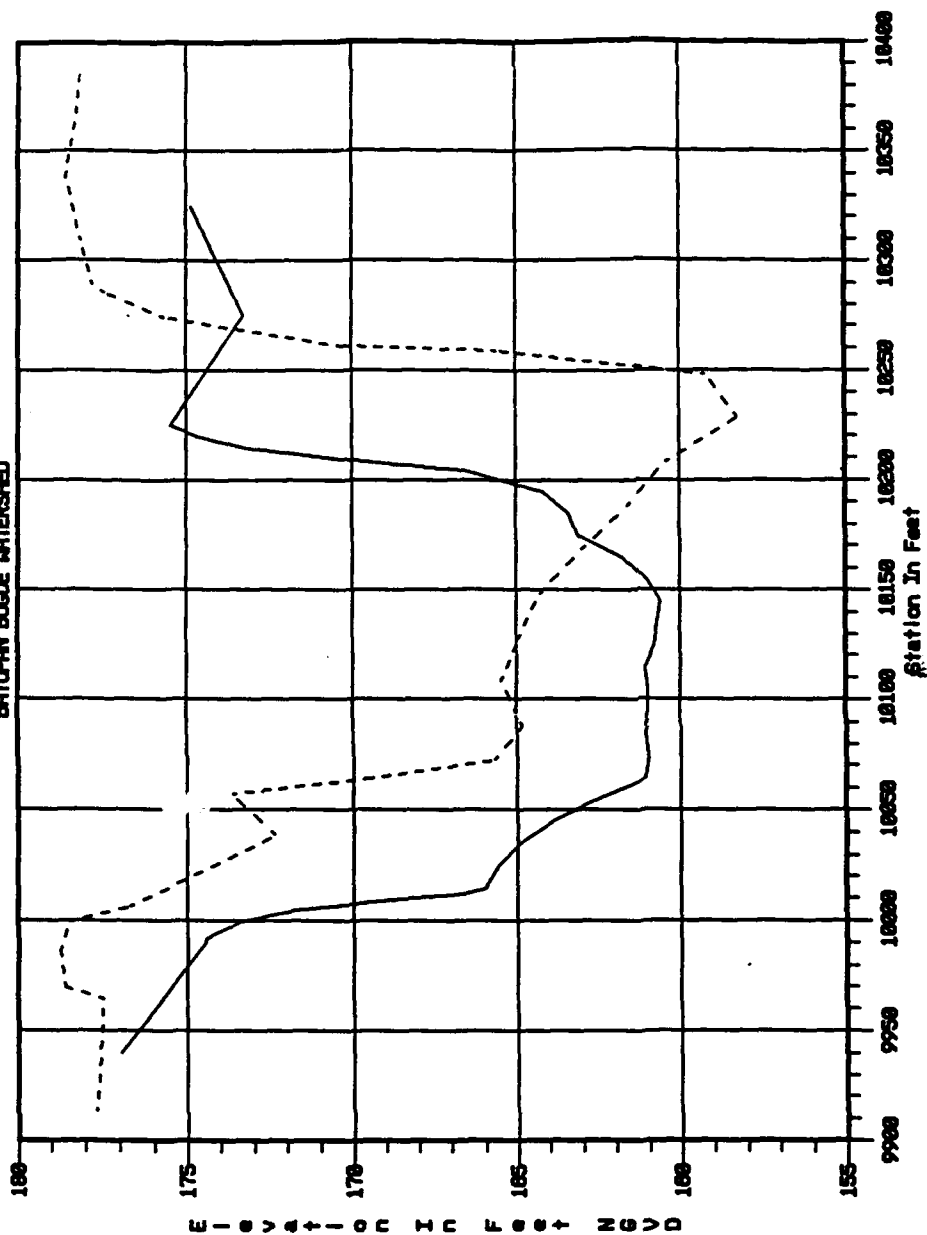


Batupan Bogue Watershed
Little Mouse Creek



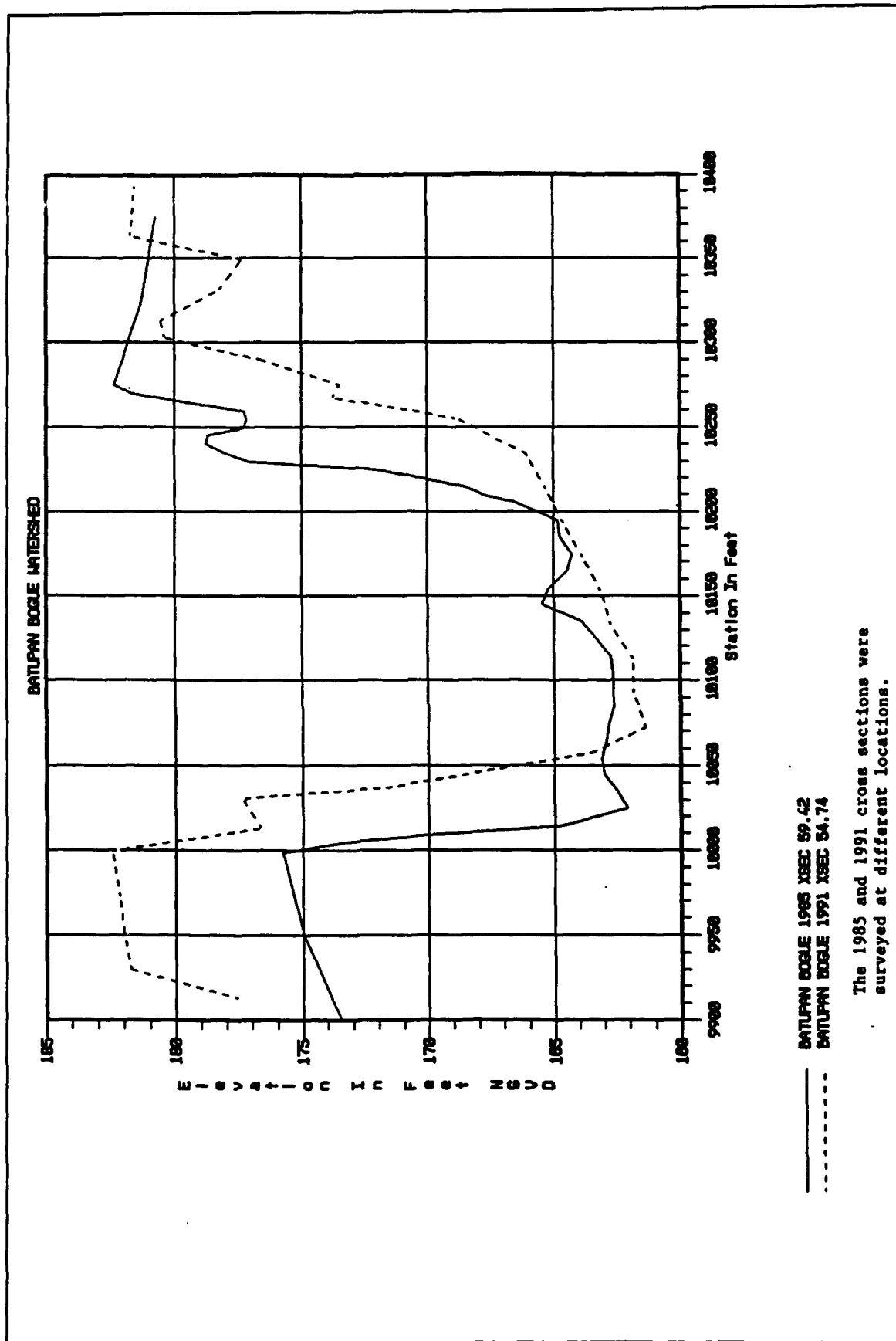


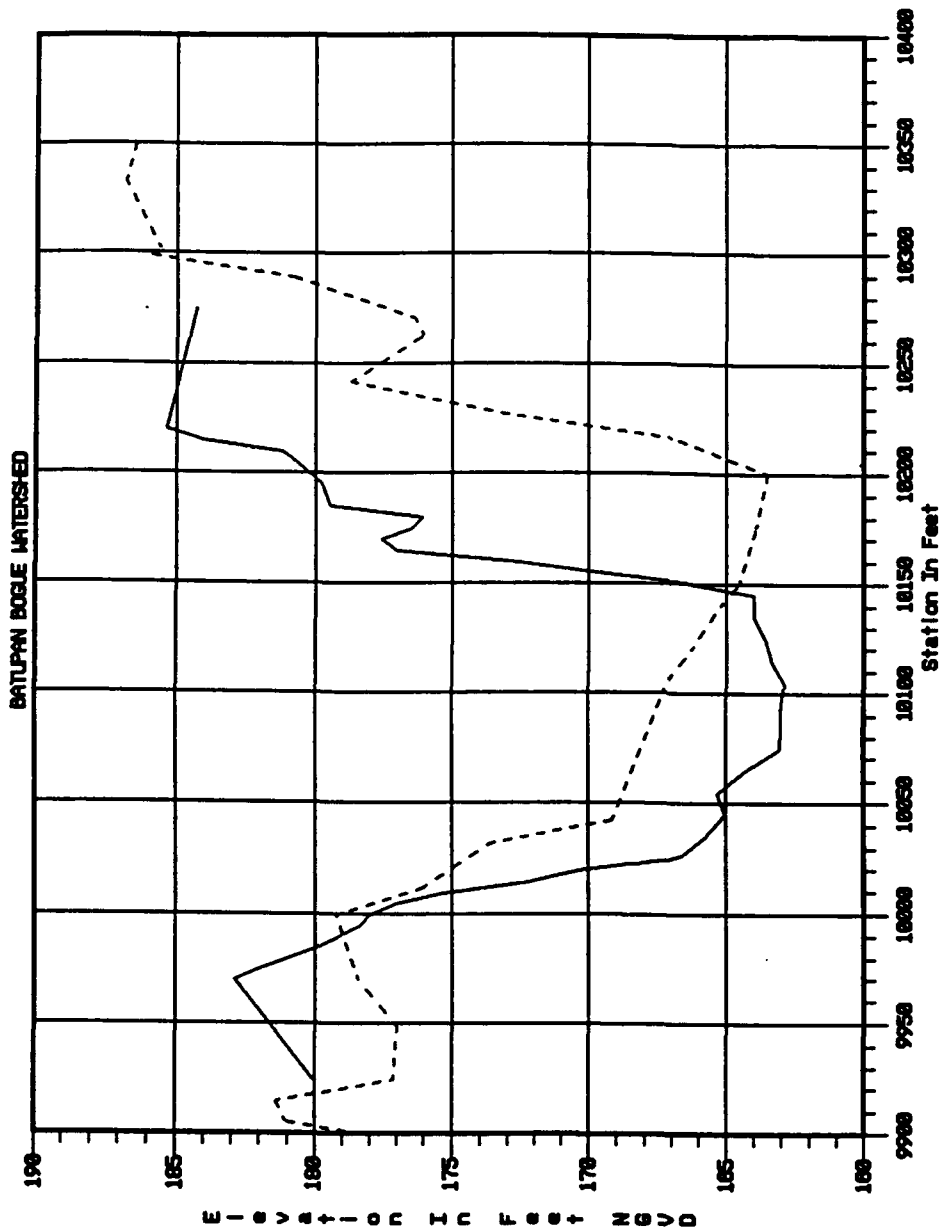
BATUPAN BOGLE WATERSHED



————— BATUPAN BOGLE 1985 XSEC 35.48
 - - - - - BATUPAN BOGLE 1991 XSEC 31.48

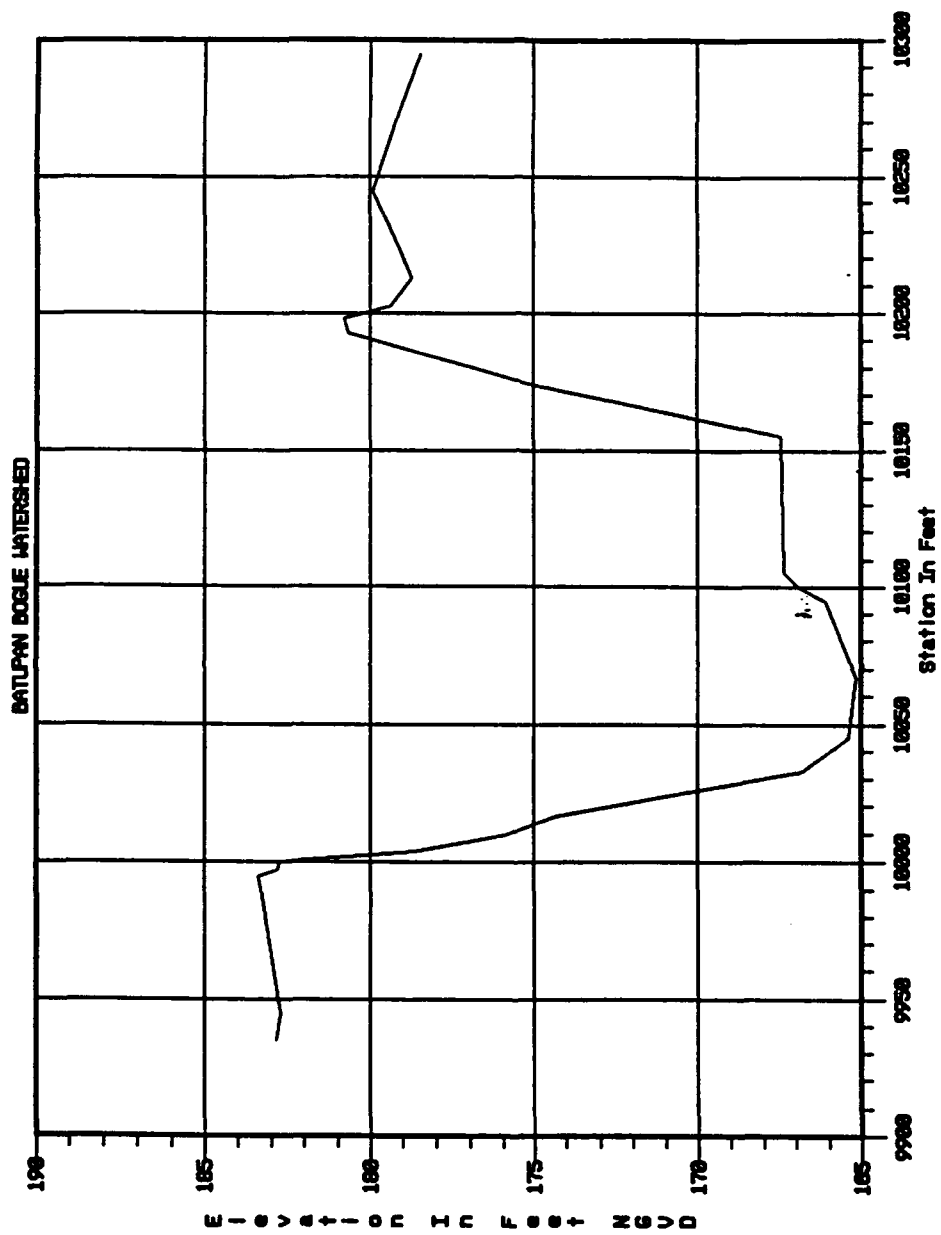
The 1985 and 1991 cross sections were surveyed at different locations.





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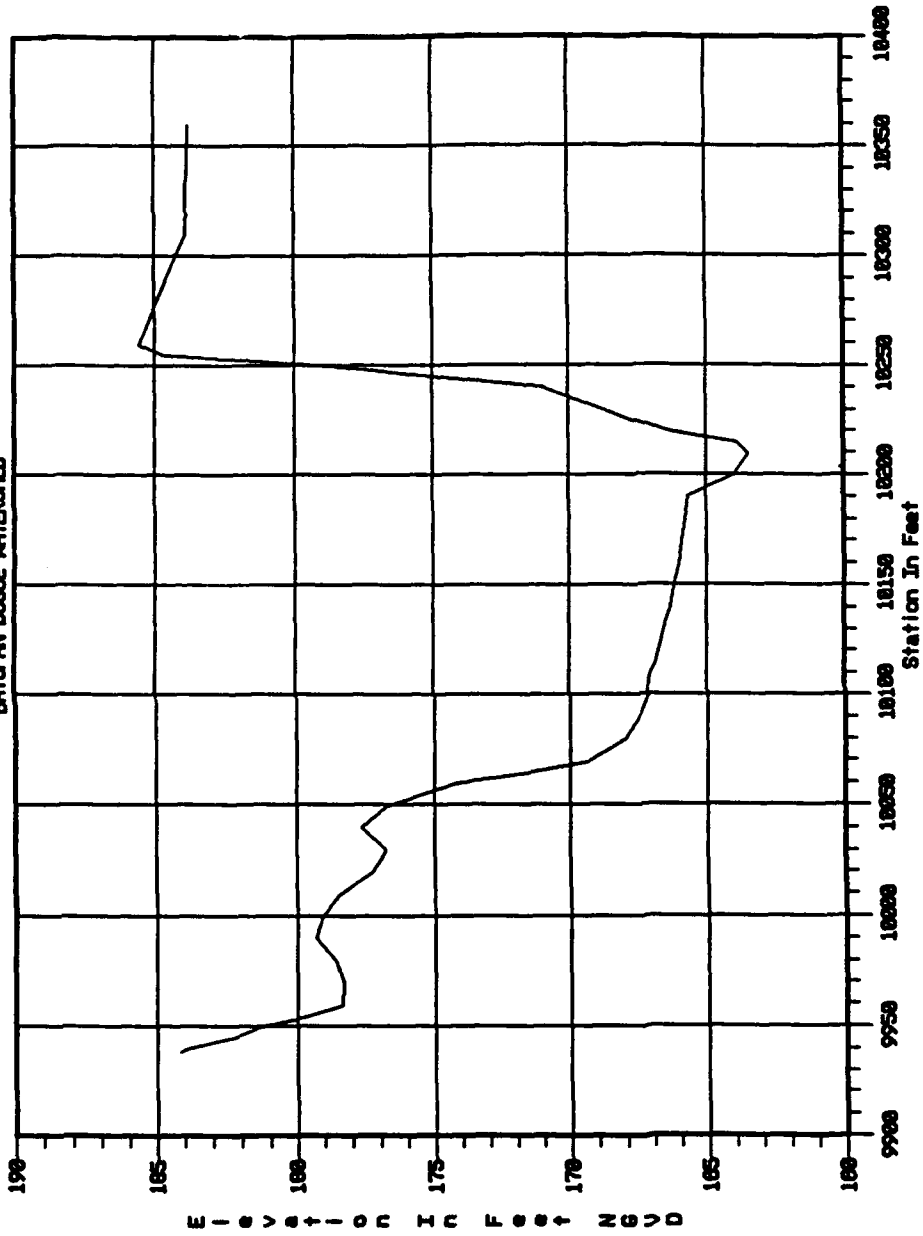
The 1985 and 1991 cross sections were surveyed at different locations.



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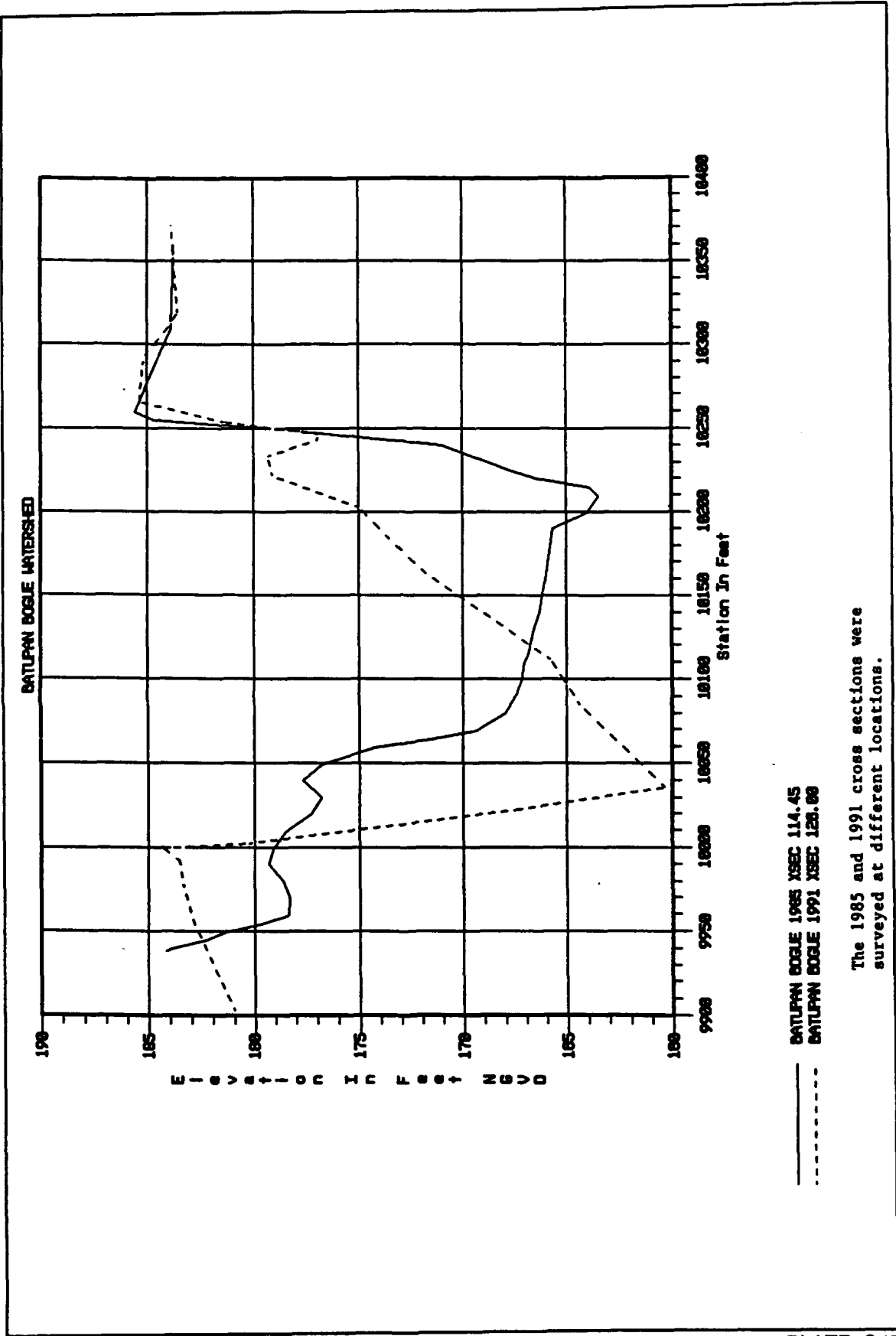
The 1985 and 1991 cross sections were surveyed at different locations.

BATUPAN BOGLE WATERSHED

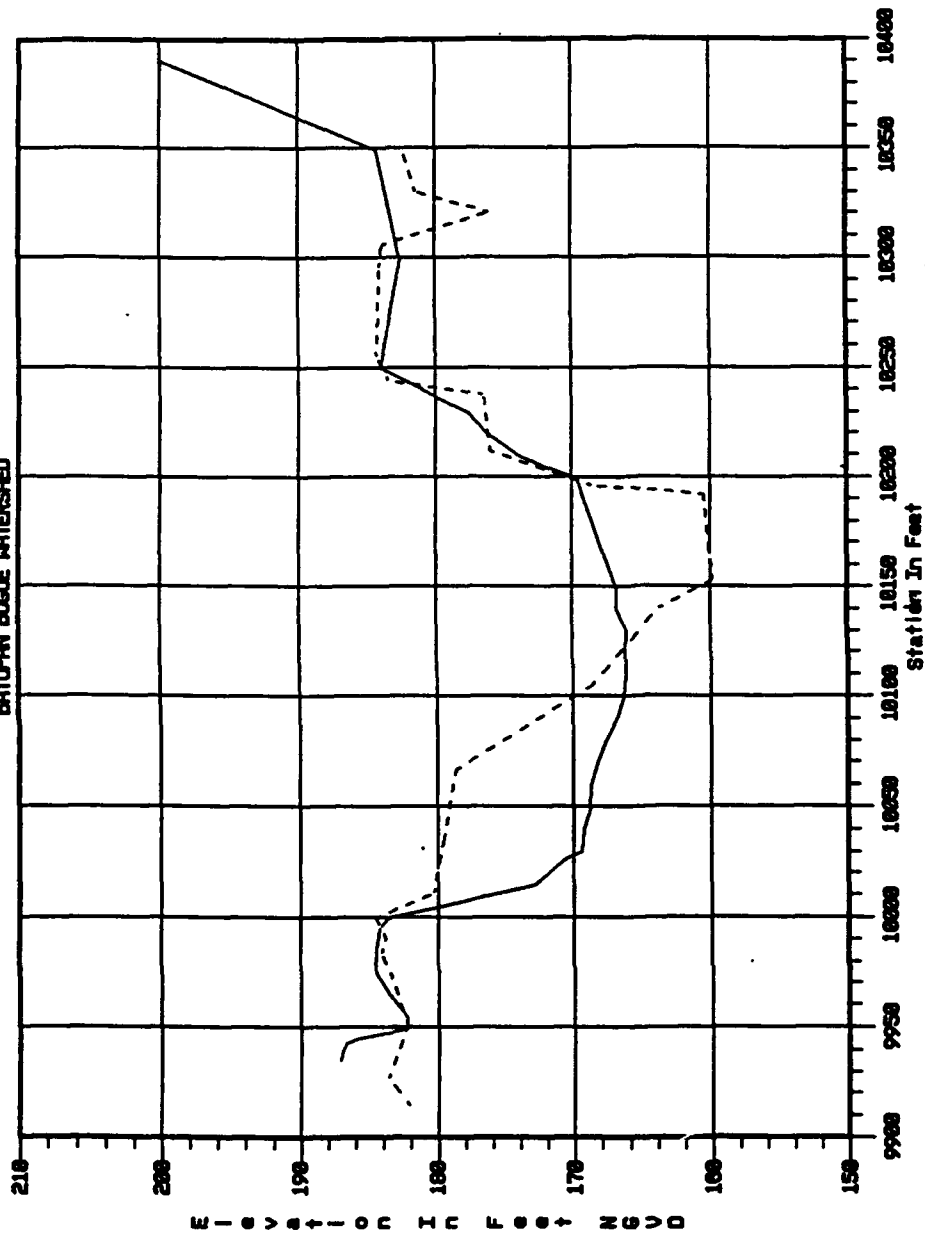


———— BATUPAN BOGLE 1985 XSEC 114.45

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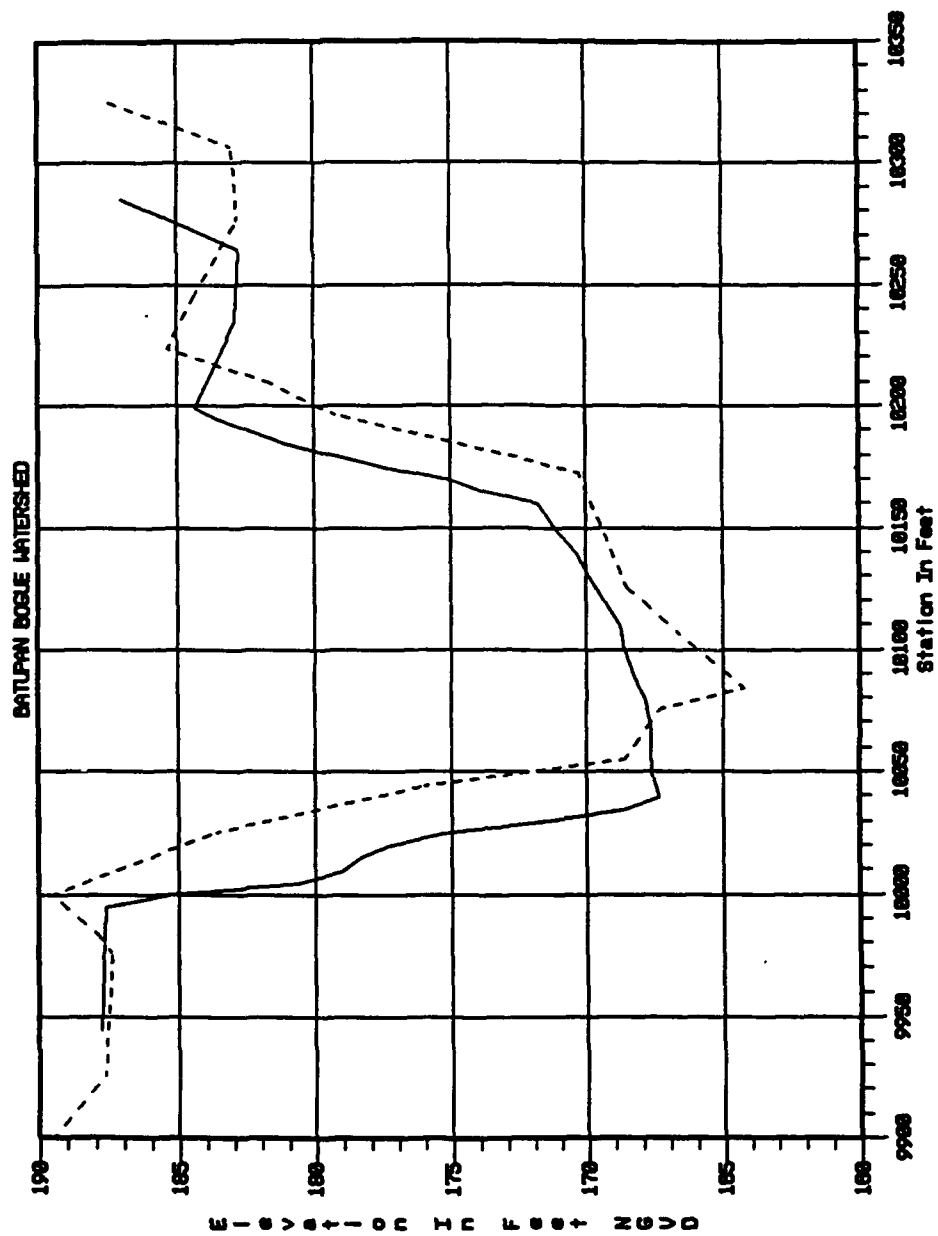


BATUPAN BOGLE INTERSECT



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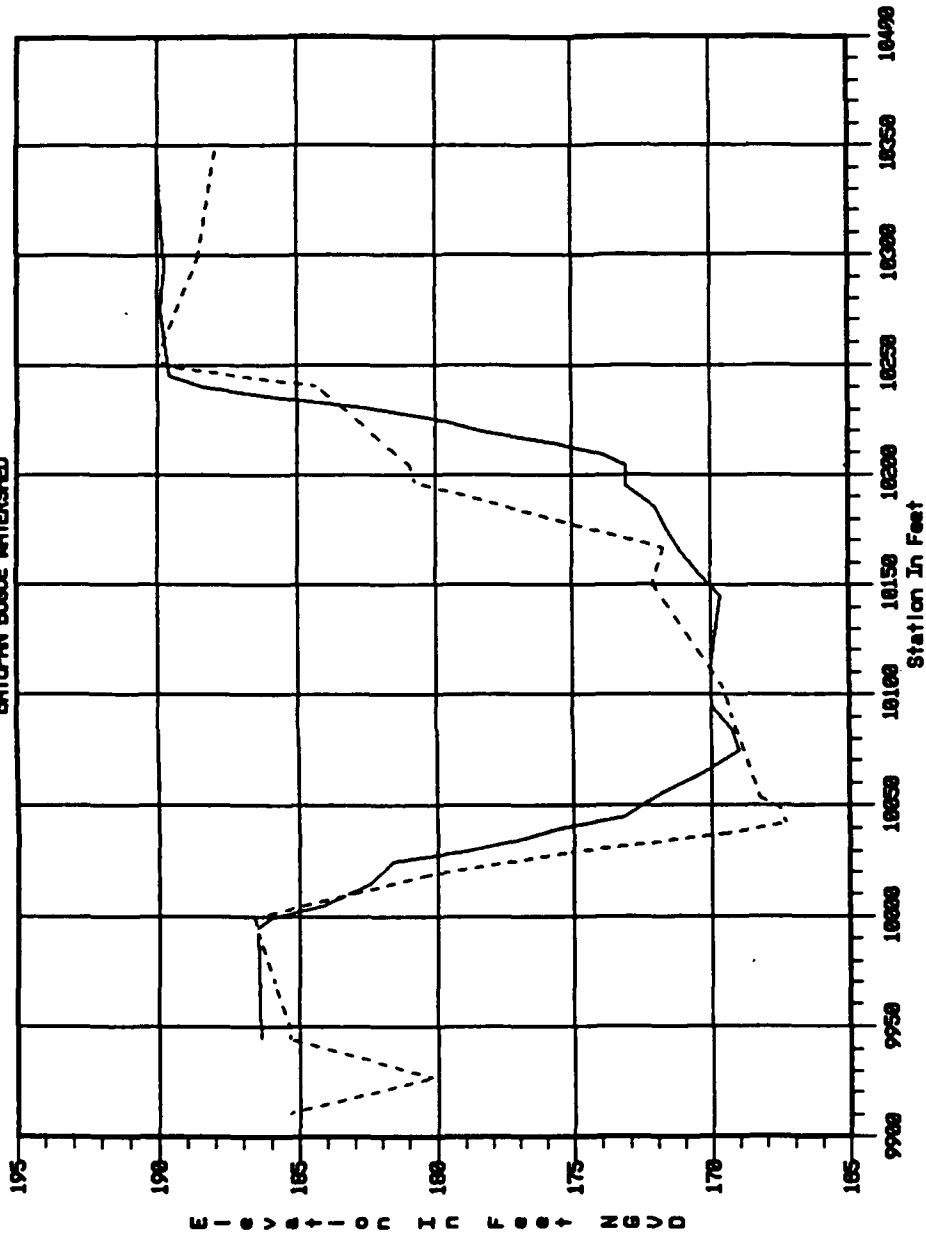
The 1985 and 1991 cross sections were
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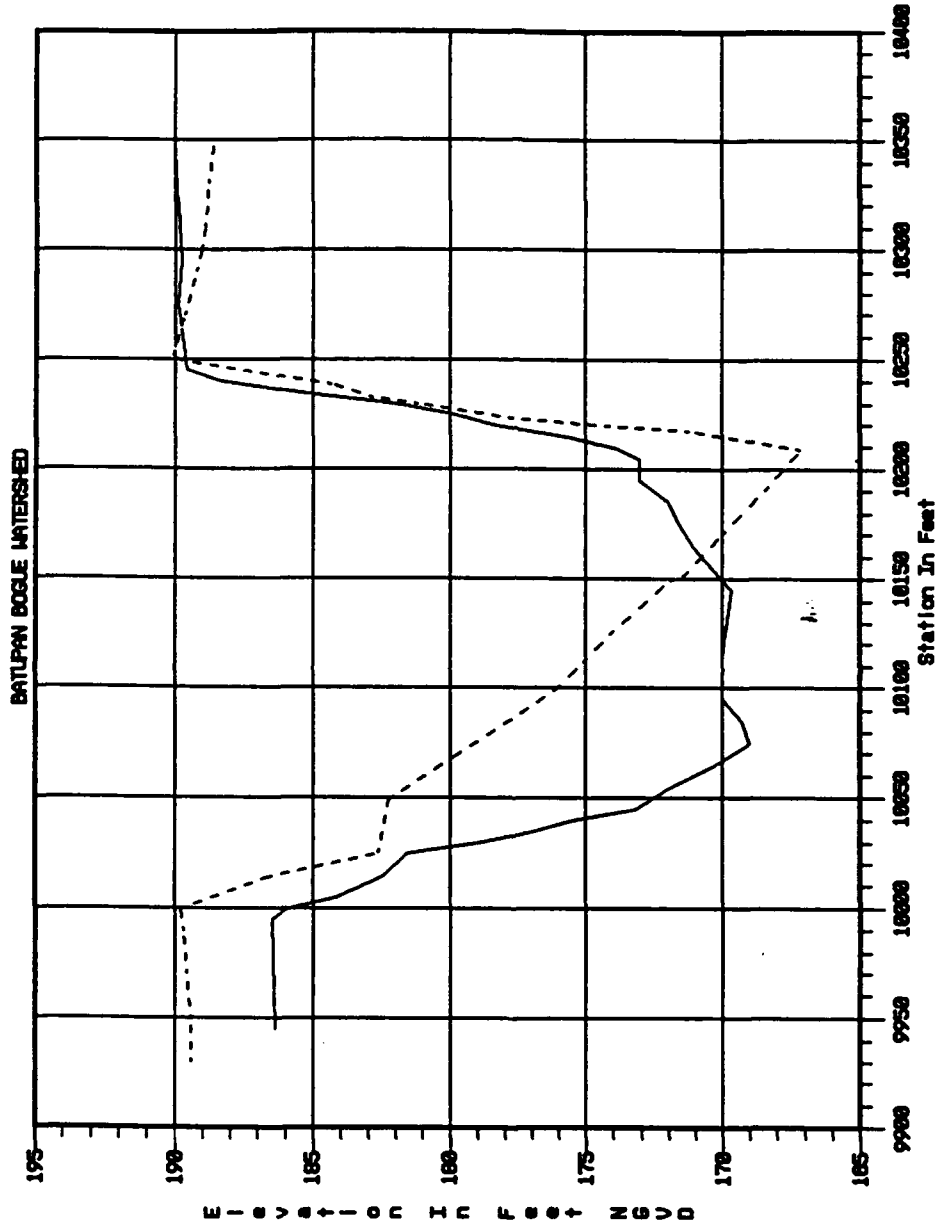
The 1985 and 1991 cross sections were surveyed at different locations.

BATUPAN BOGLE WATERSHED



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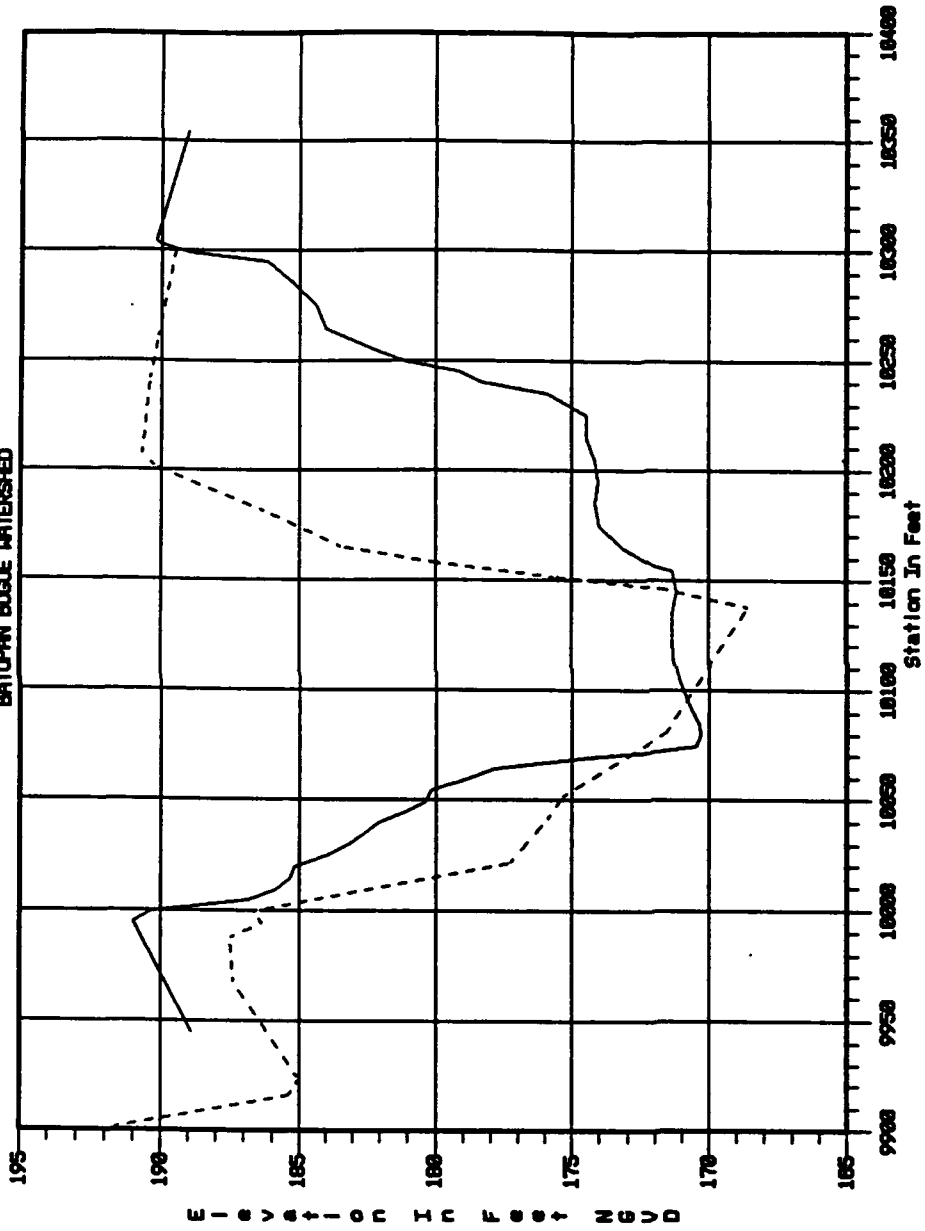
The 1985 and 1991 cross sections were surveyed at different locations.



— BATUPHAN BOGIE 1985 XSEC 204.00
 - - - BATUPHAN BOGIE 1991 XSEC 216.00

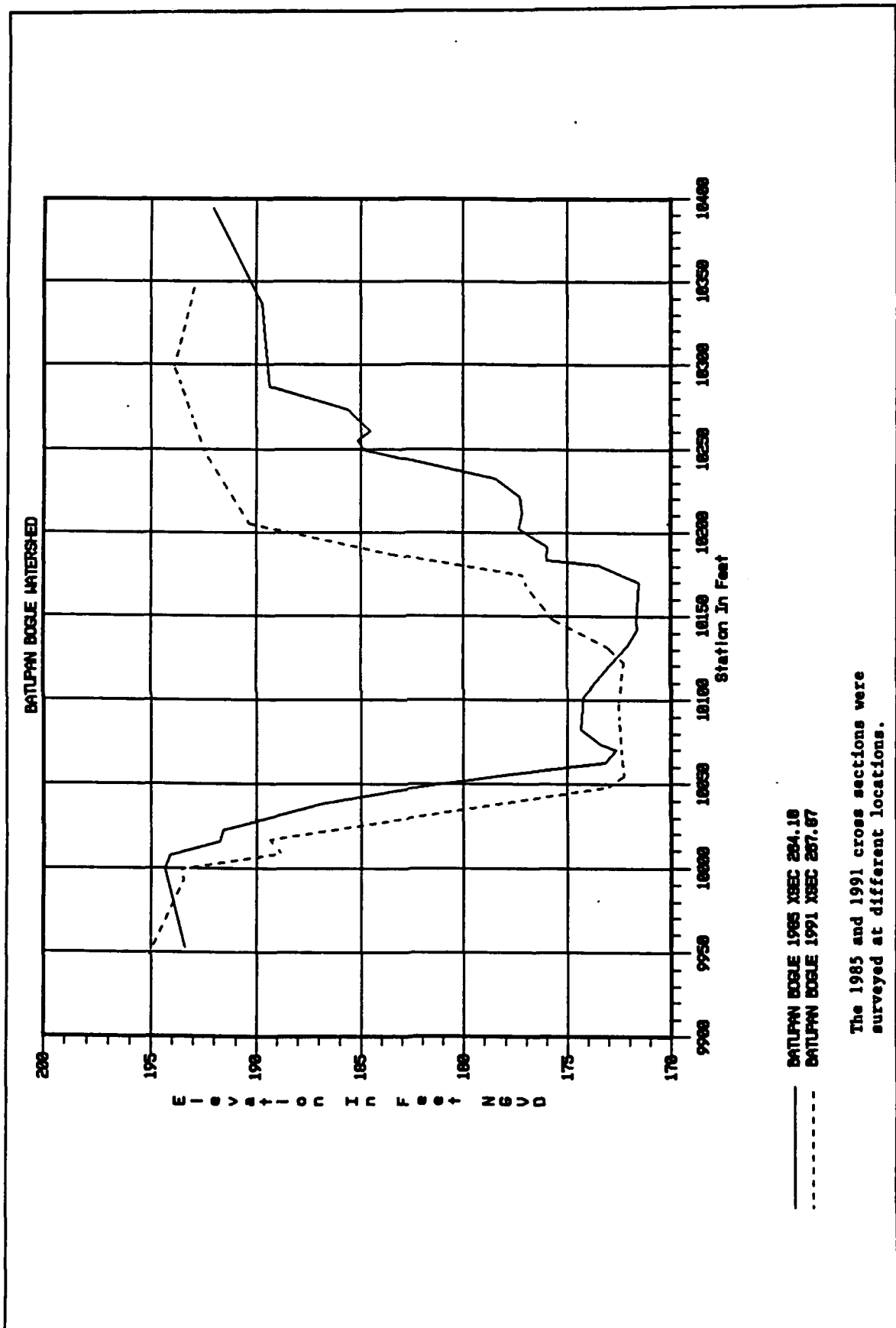
The 1985 and 1991 cross sections were surveyed at different locations.

BATUPAN BOGLE WATERSHED

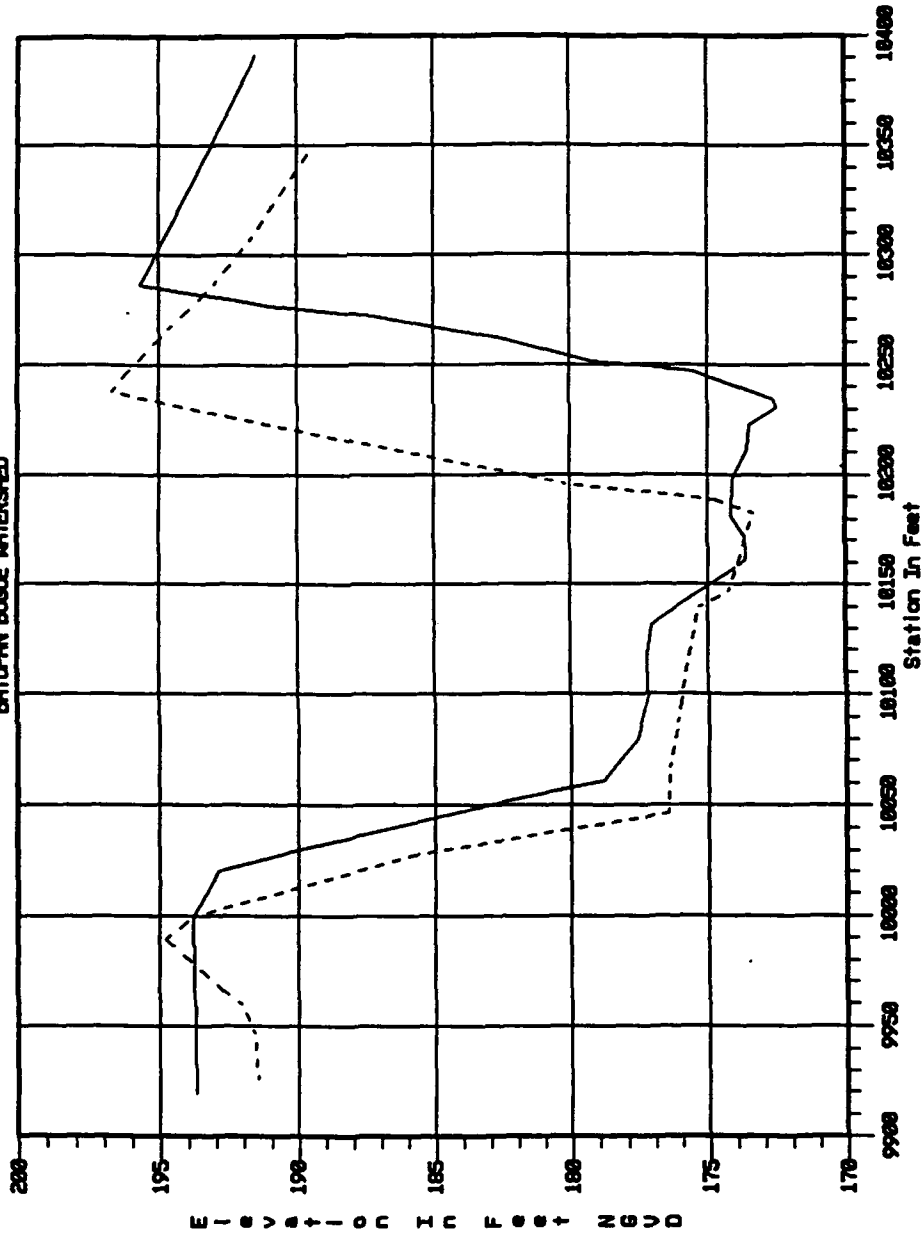


— BATUPAN BOGLE 1985 XSEC 231.00
 - - - BATUPAN BOGLE 1991 XSEC 241.00

The 1985 and 1991 cross sections were
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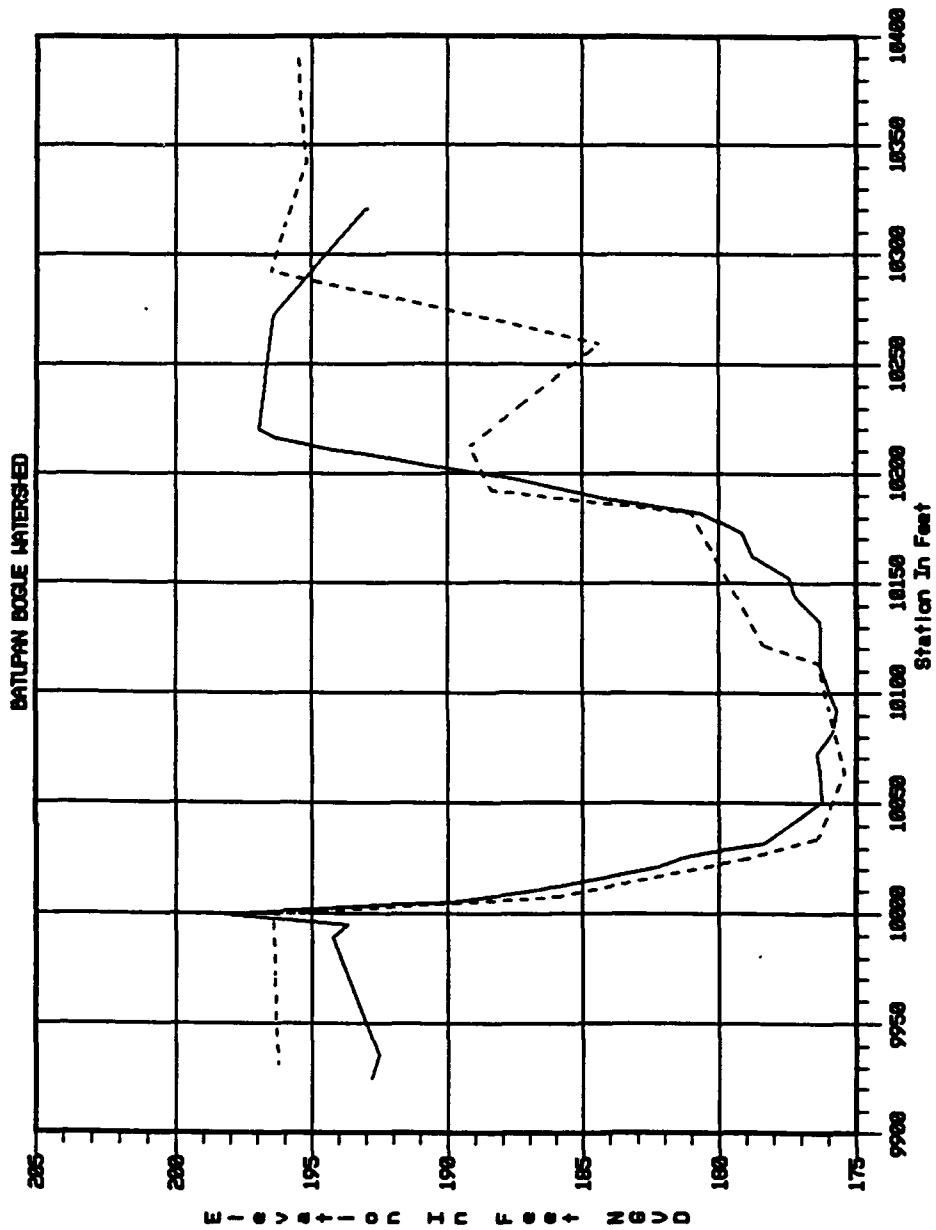


BATUPAN BOGLE WATERSHED



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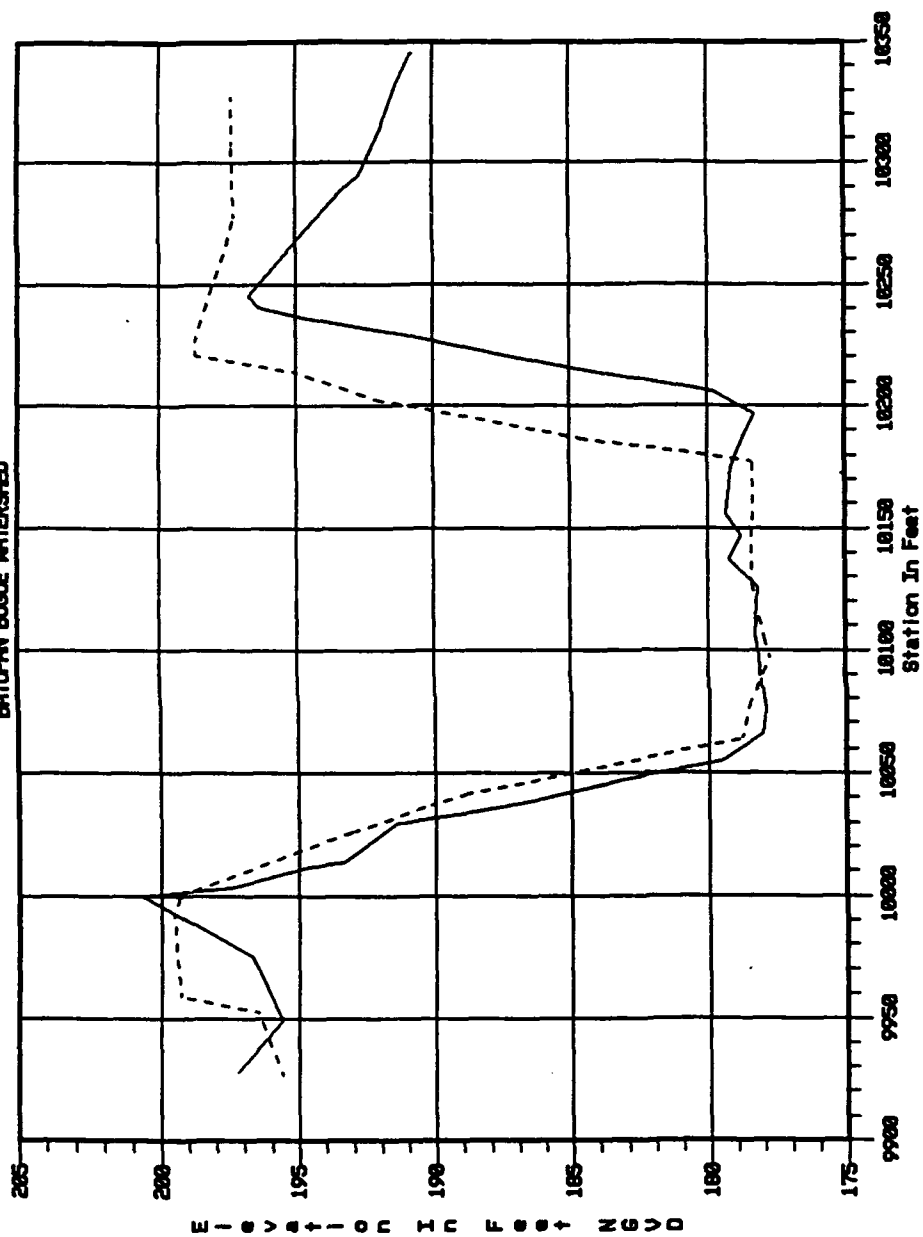
The 1985 and 1991 cross sections were surveyed at different locations.



— BATUPAN BOGLE 1985 XSEC 328.16
 - - - BATUPAN BOGLE 1991 XSEC 315.00

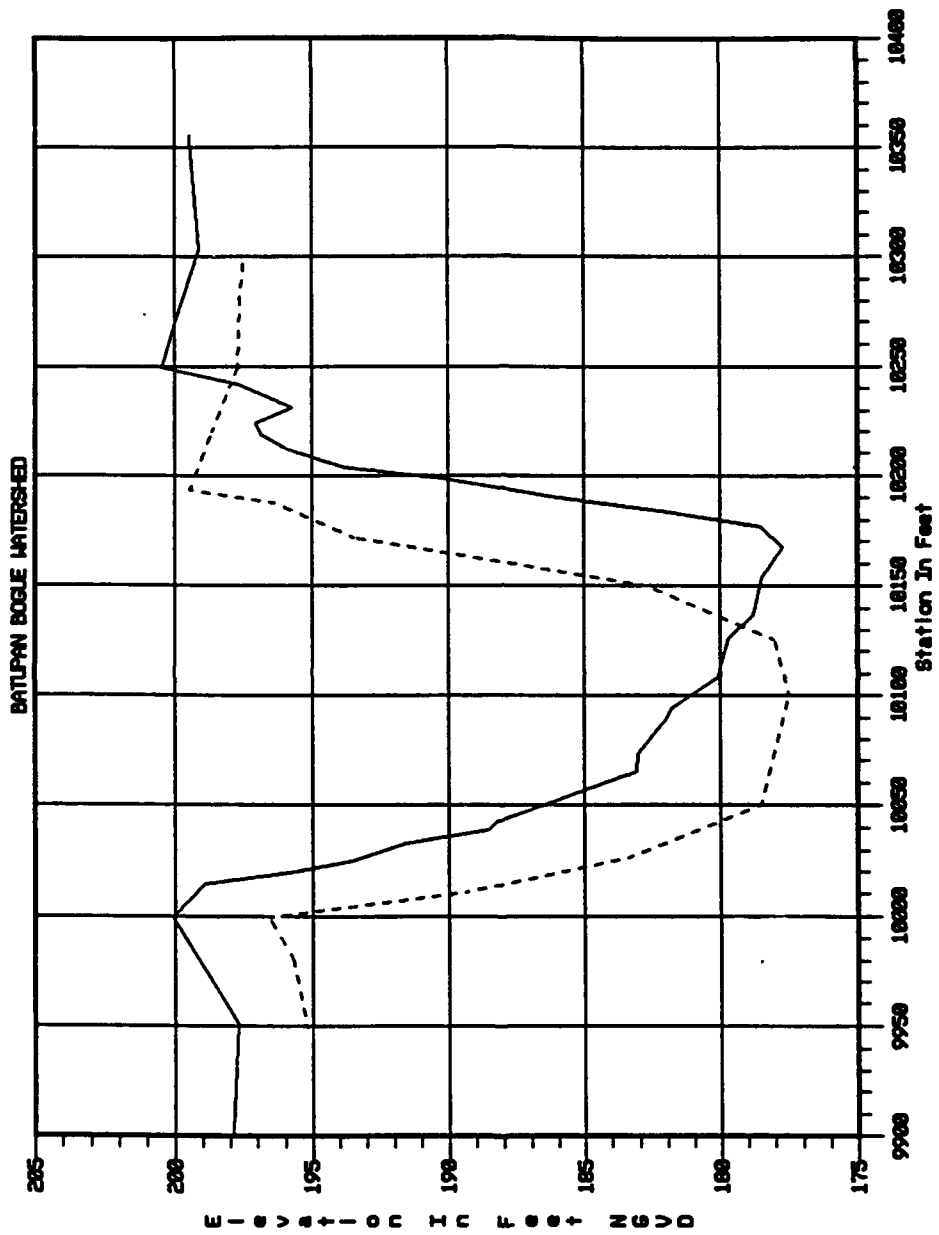
The 198, and 1991 cross sections were surveyed at different locations.

BATUPAN BOGLE WATERSHED



— BATUPAN BOGLE 1985 XSEC 348.65
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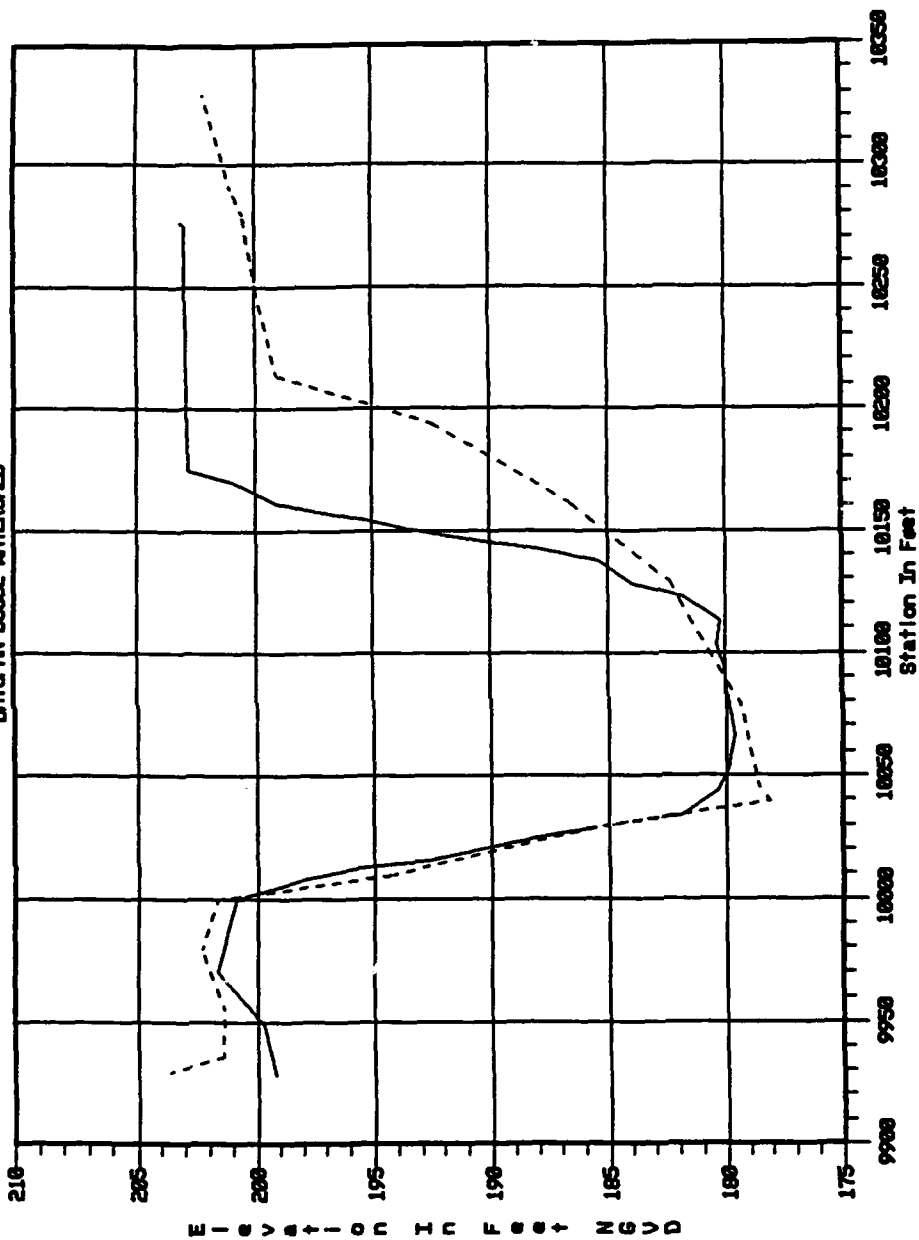
The 1985 and 1991 cross sections were
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 - - - BATUPAN BOGLE 1991 XSEC 382.00

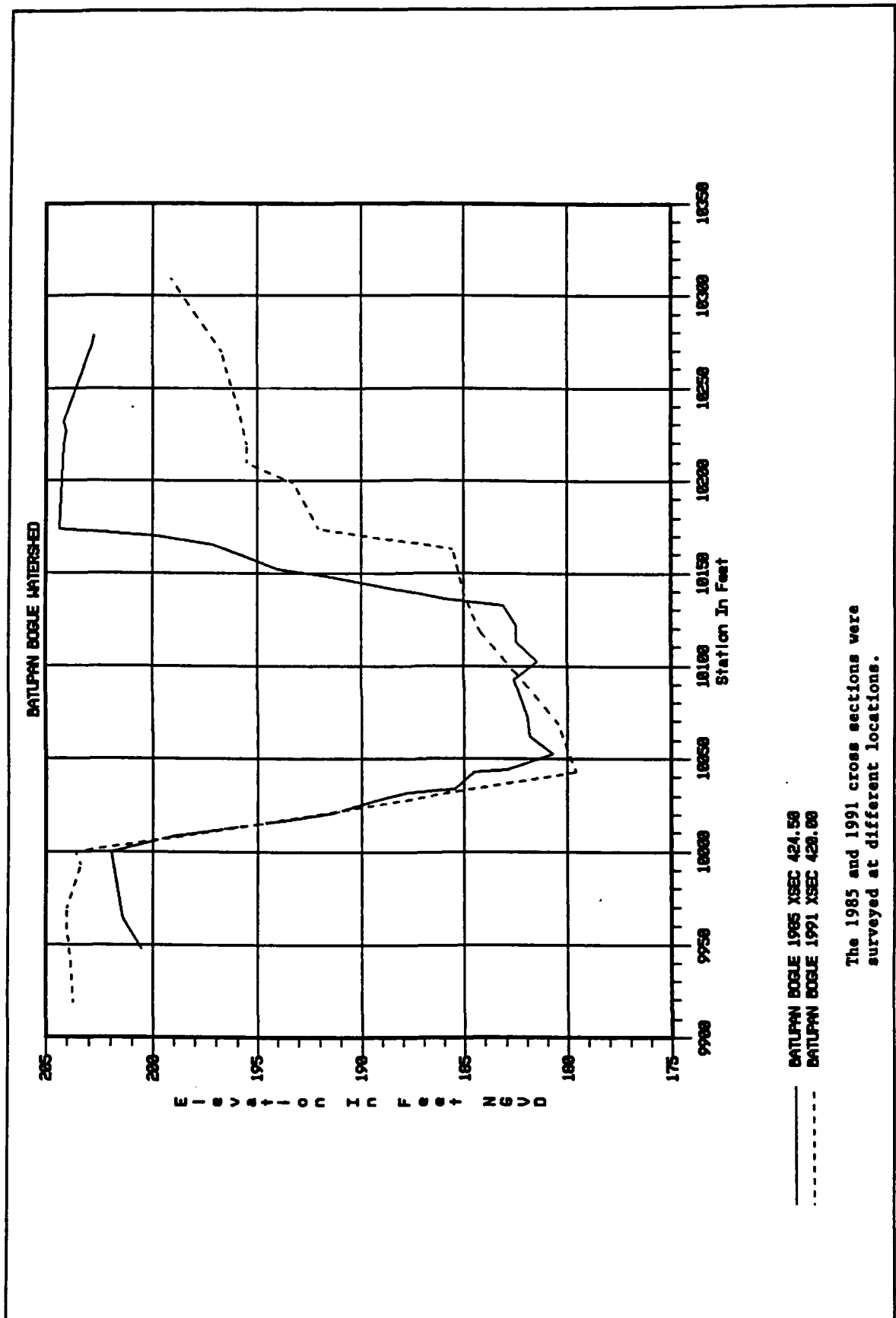
The 1985 and 1991 cross sections were surveyed at different locations.

BATUPAN BOGLE WATERSHED

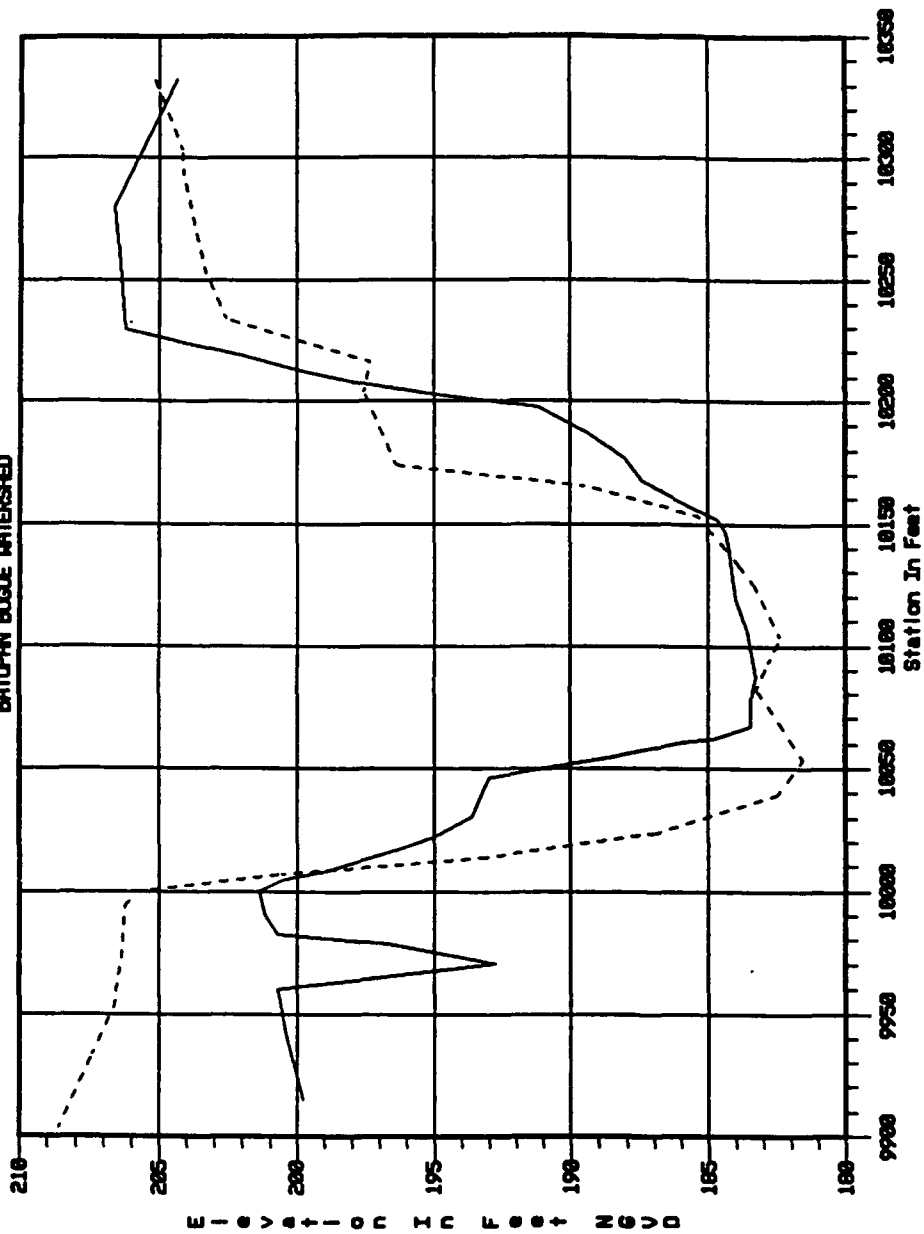


BATUPAN BOGLE 1985 XSEC 398.78
 BATUPAN BOGLE 1991 XSEC 393.58

The 1985 and 1991 cross sections were
 surveyed at different locations.

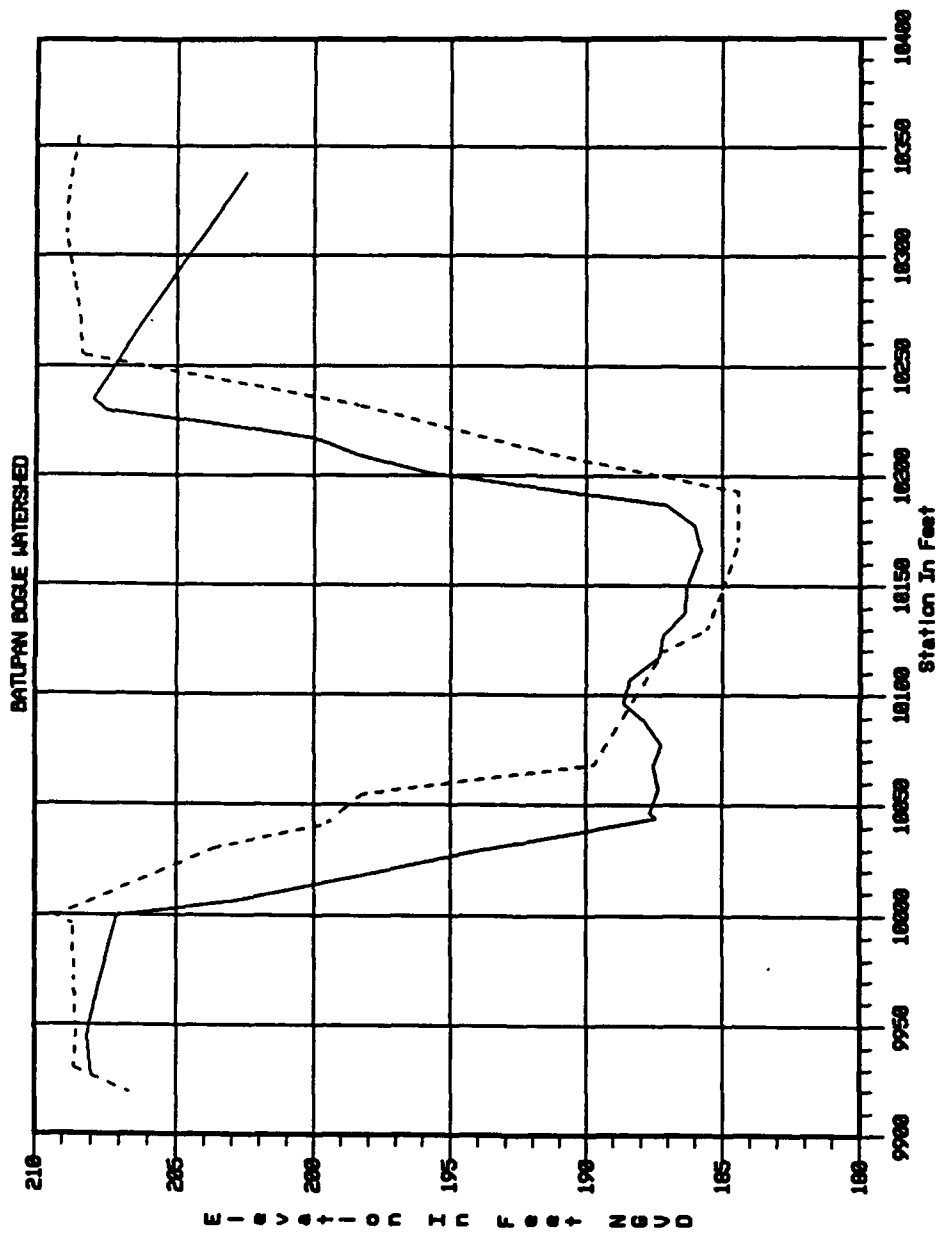


BATUPAN BOGLE WATERSHED



— BATUPAN BOGLE 1985 XSEC 449.44
 - - - BATUPAN BOGLE 1991 XSEC 445.00

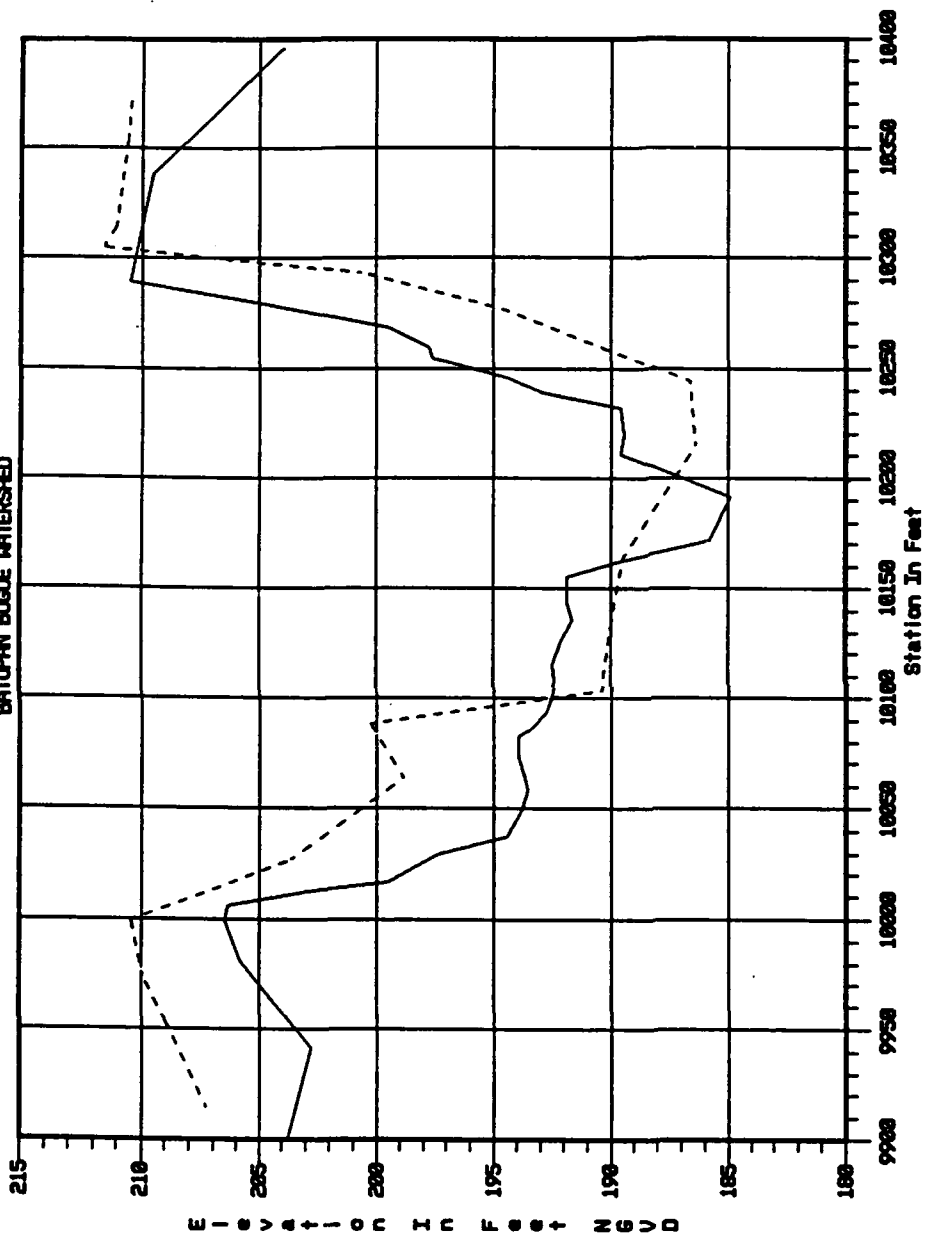
The 1985 and 1991 cross sections were surveyed at different locations.



——— BATUPAN BOGIE 1985 XSEC 477.85
 - - - - - BATUPAN BOGIE 1991 XSEC 471.25

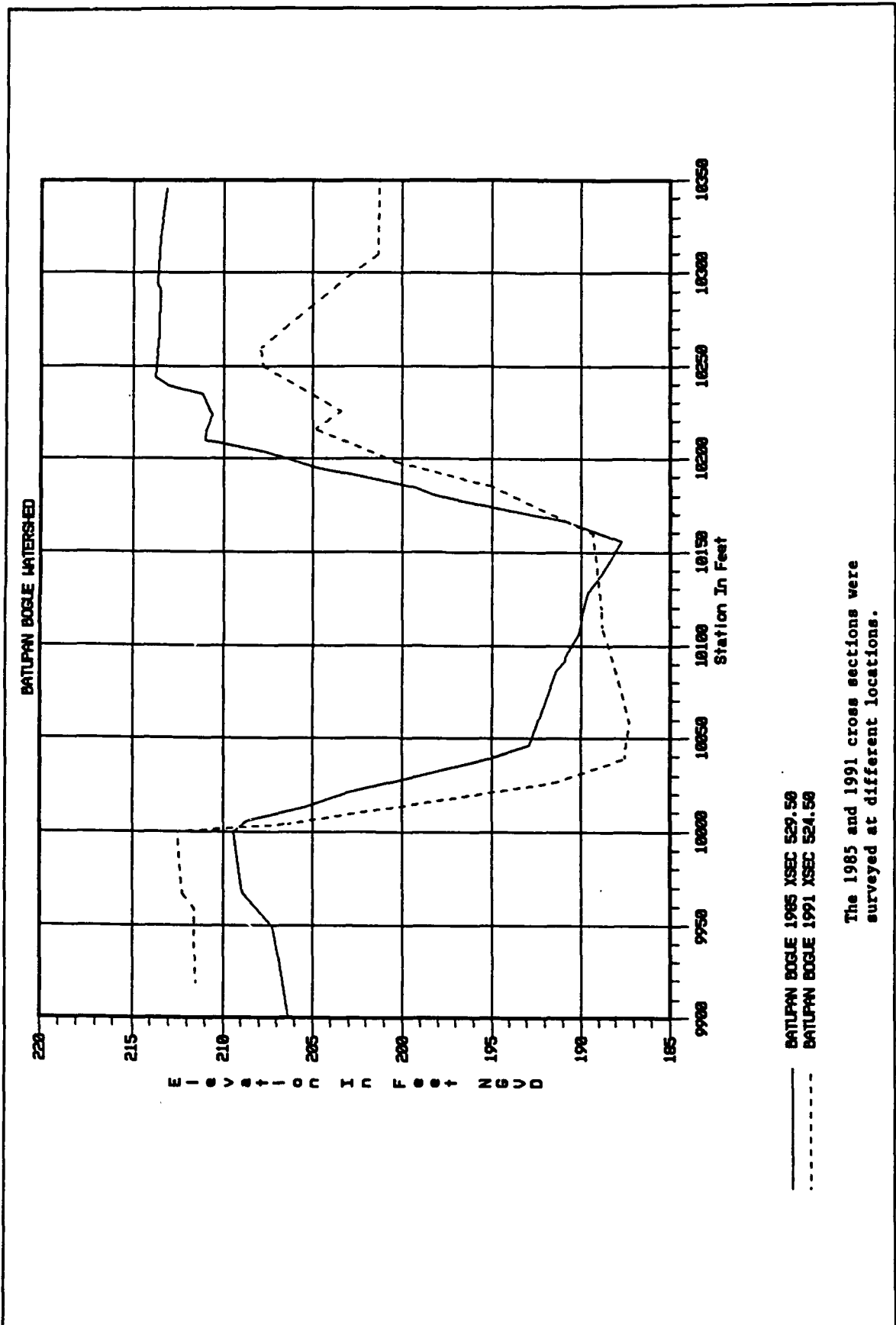
The 1985 and 1991 cross sections were surveyed at different locations.

BATUPAN BOGLE WATERSHED



— BATUPAN BOGLE 1985 XSEC 583.41
 - - - BATUPAN BOGLE 1991 XSEC 498.08

The 1985 and 1991 cross sections were surveyed at different locations.



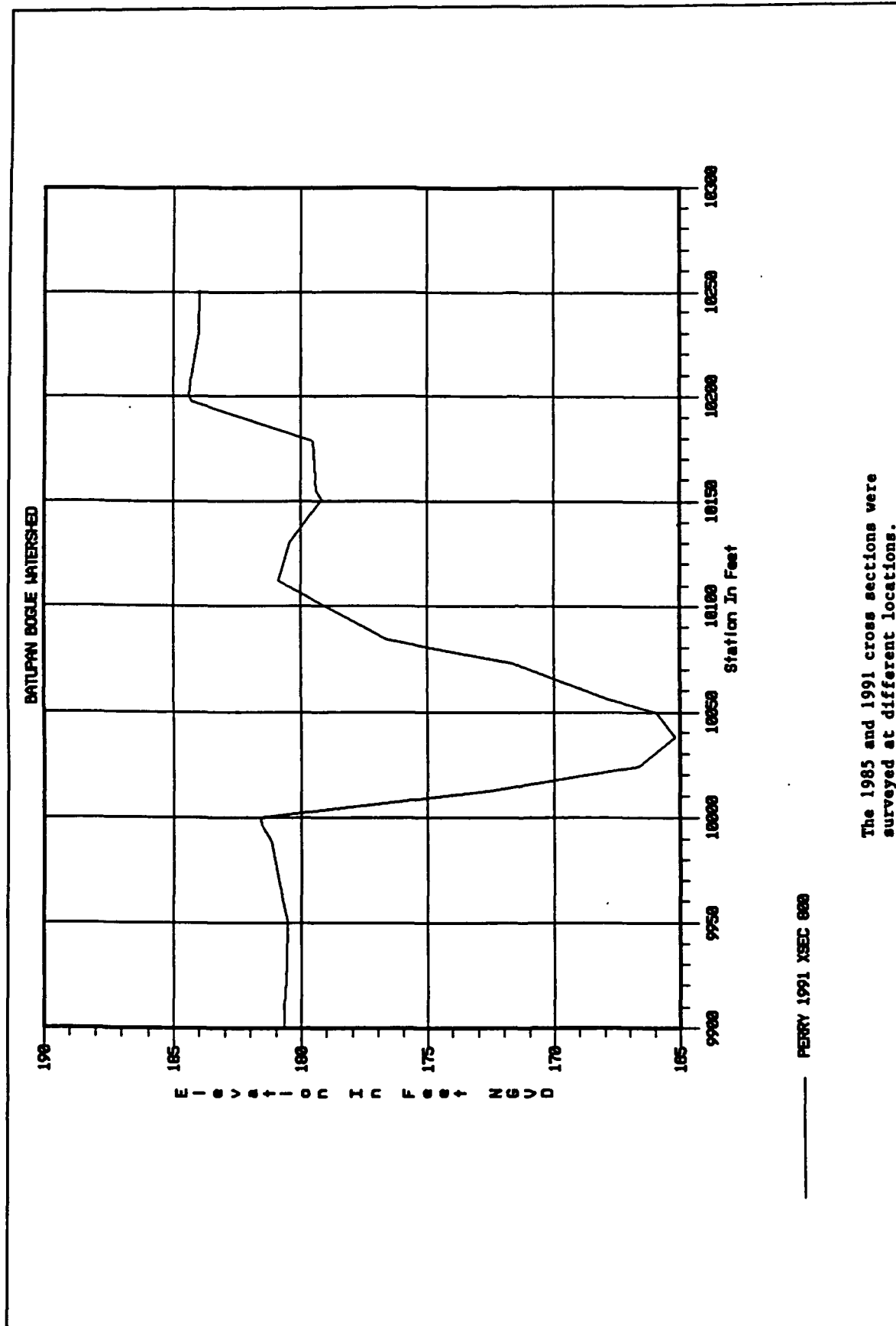
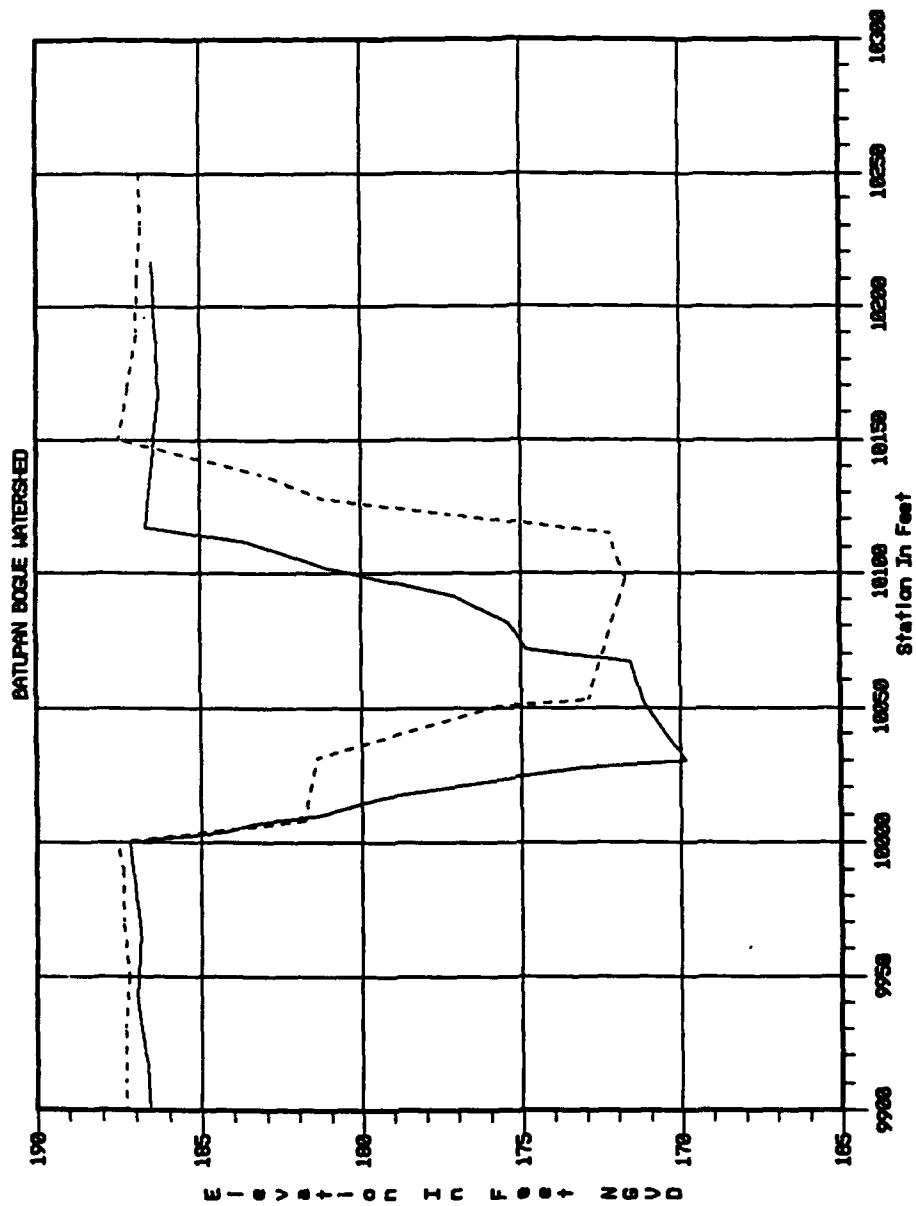


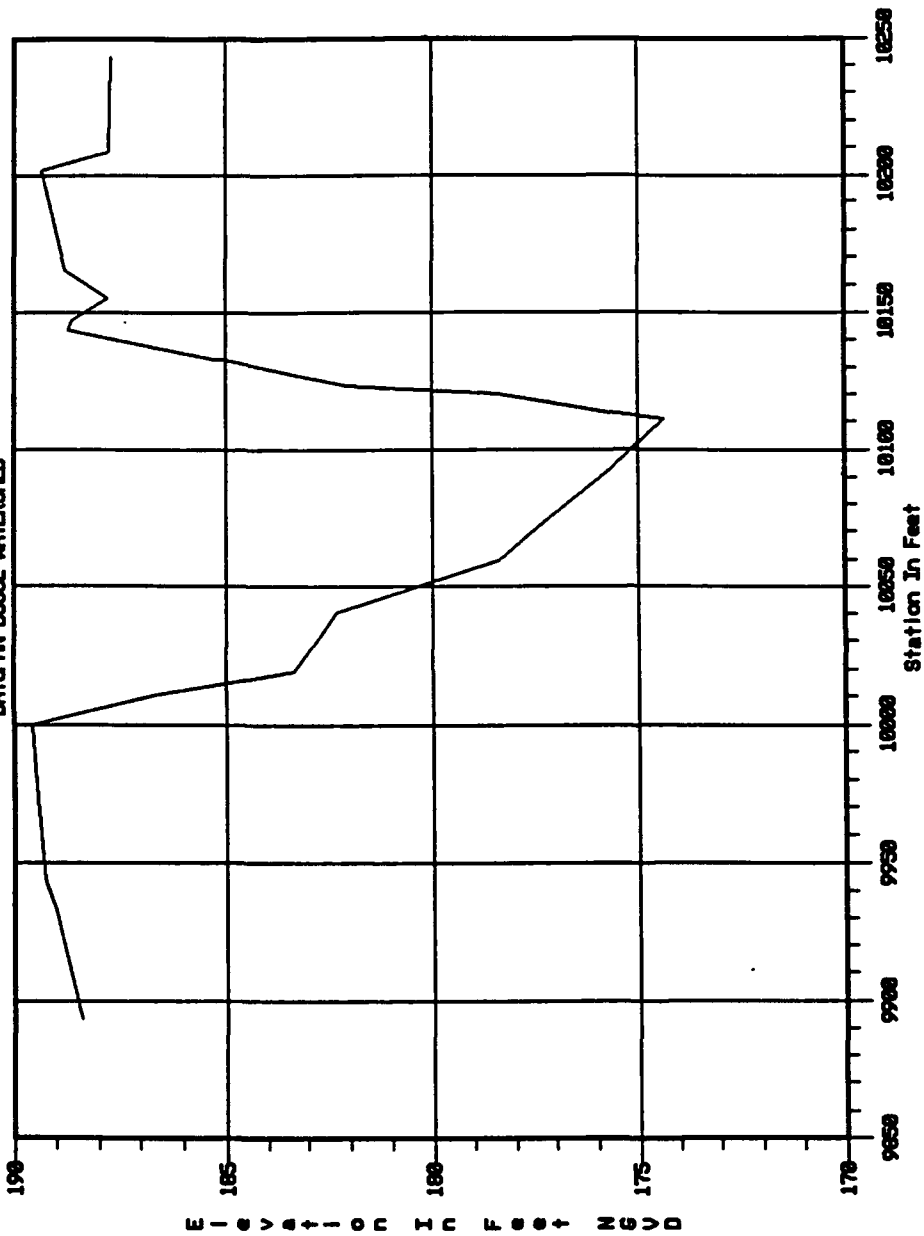
PLATE C62



— PERRY 1985 XSEC 28.10
 - - - PERRY 1991 XSEC 3400

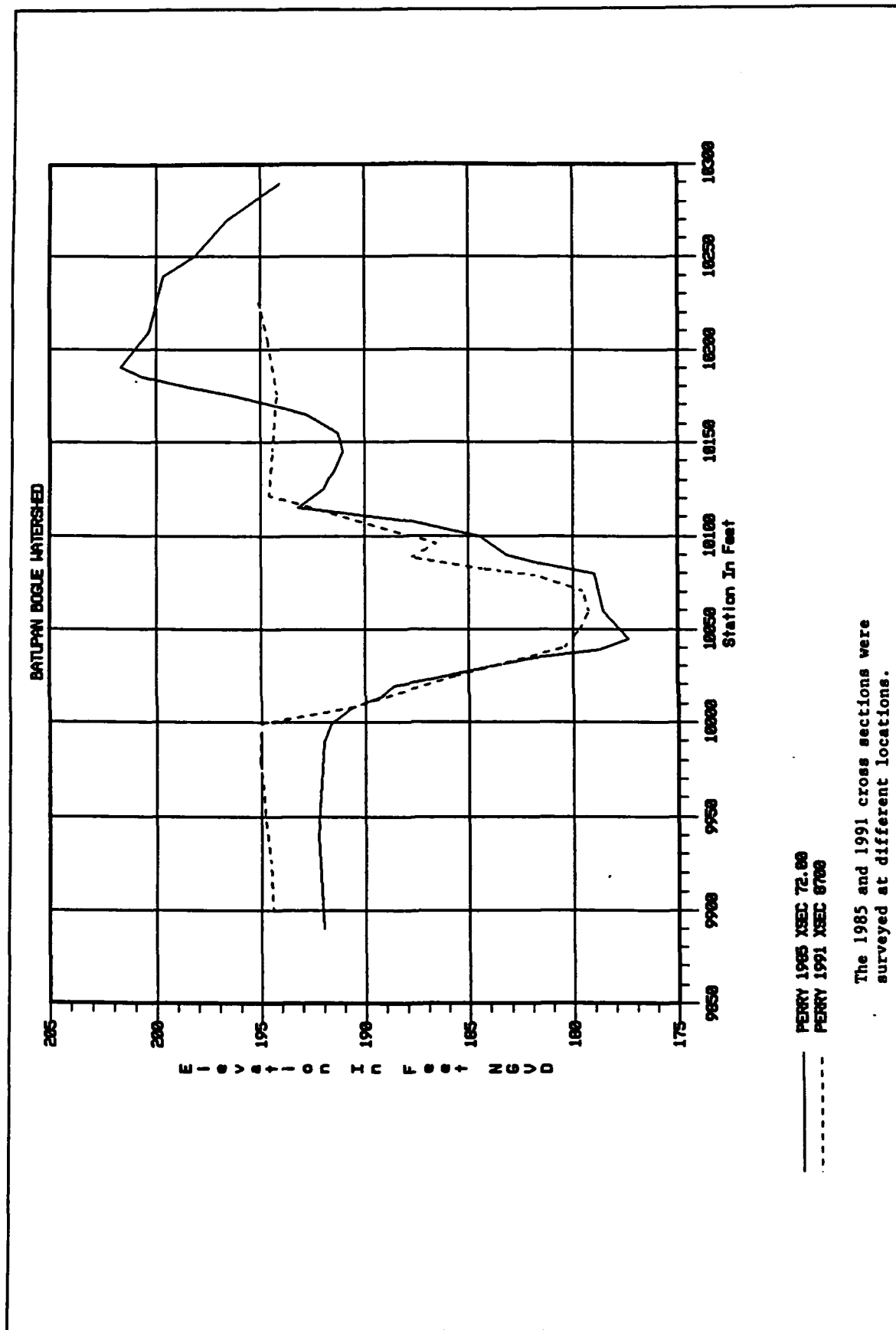
The 1985 and 1991 cross sections were surveyed at different locations.

BATUPAN BOGLE WATERSHED

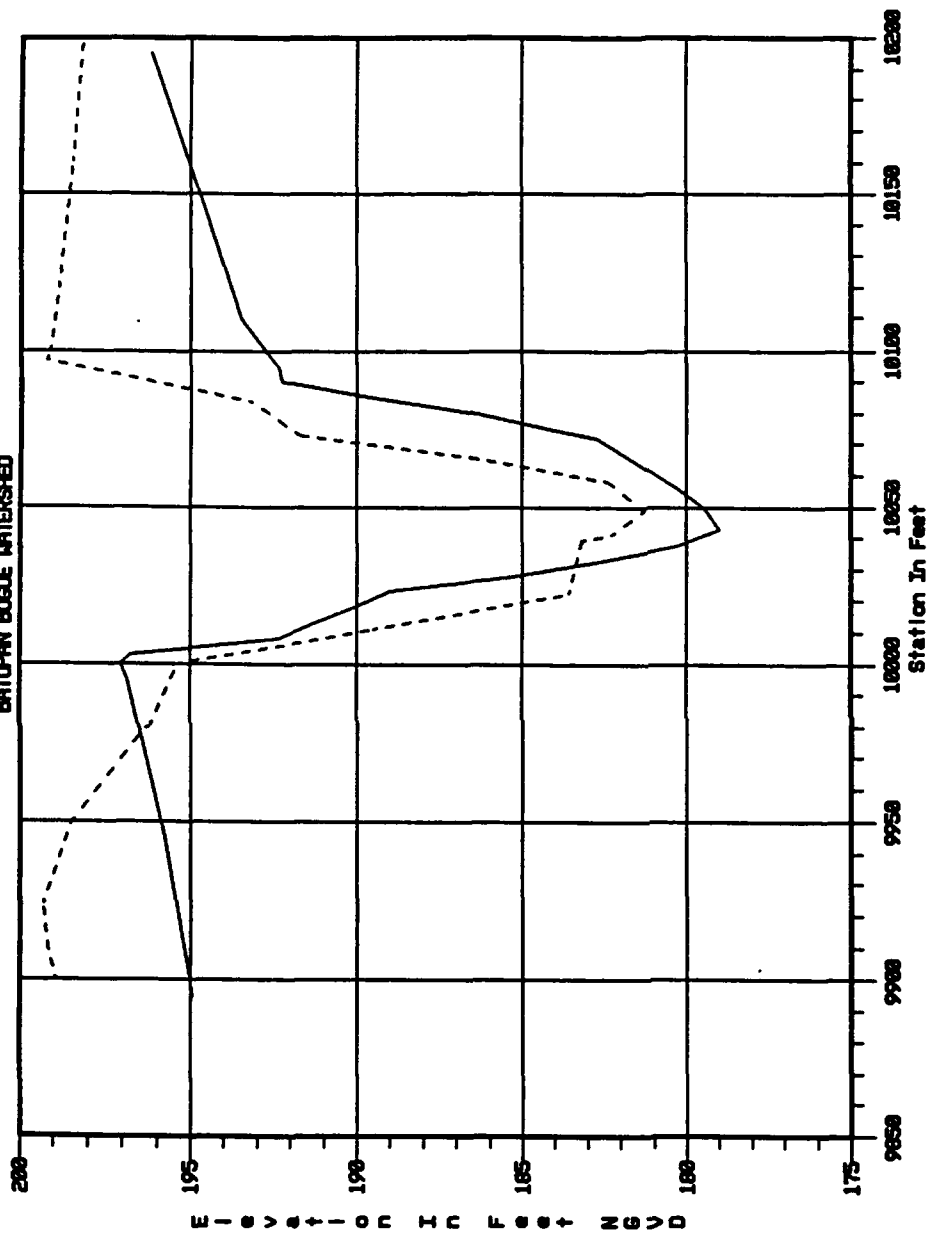


— PERRY 1991 XSEC 4746

The 1985 and 1991 cross sections were surveyed at different locations.

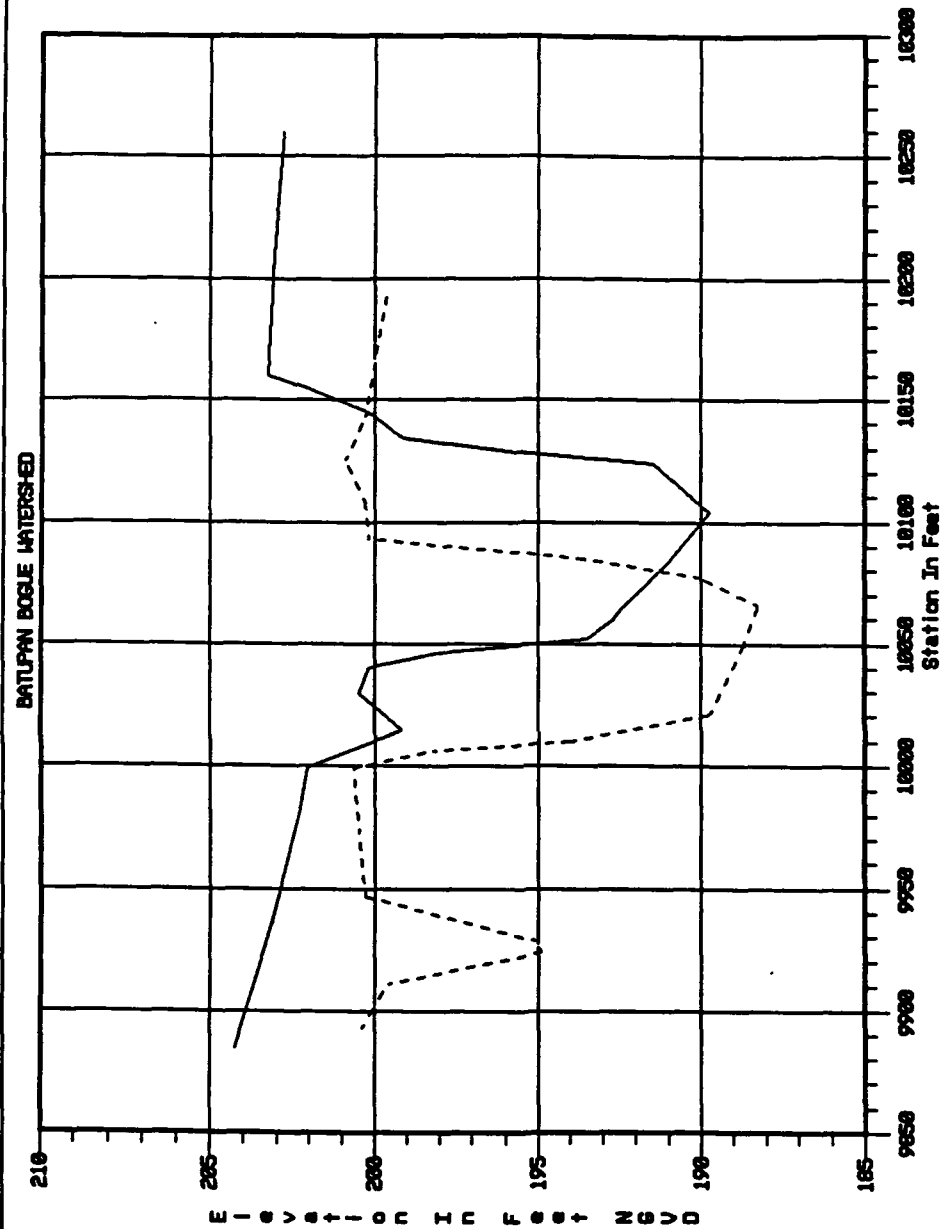


BATUPAN BOULE WATERSHED



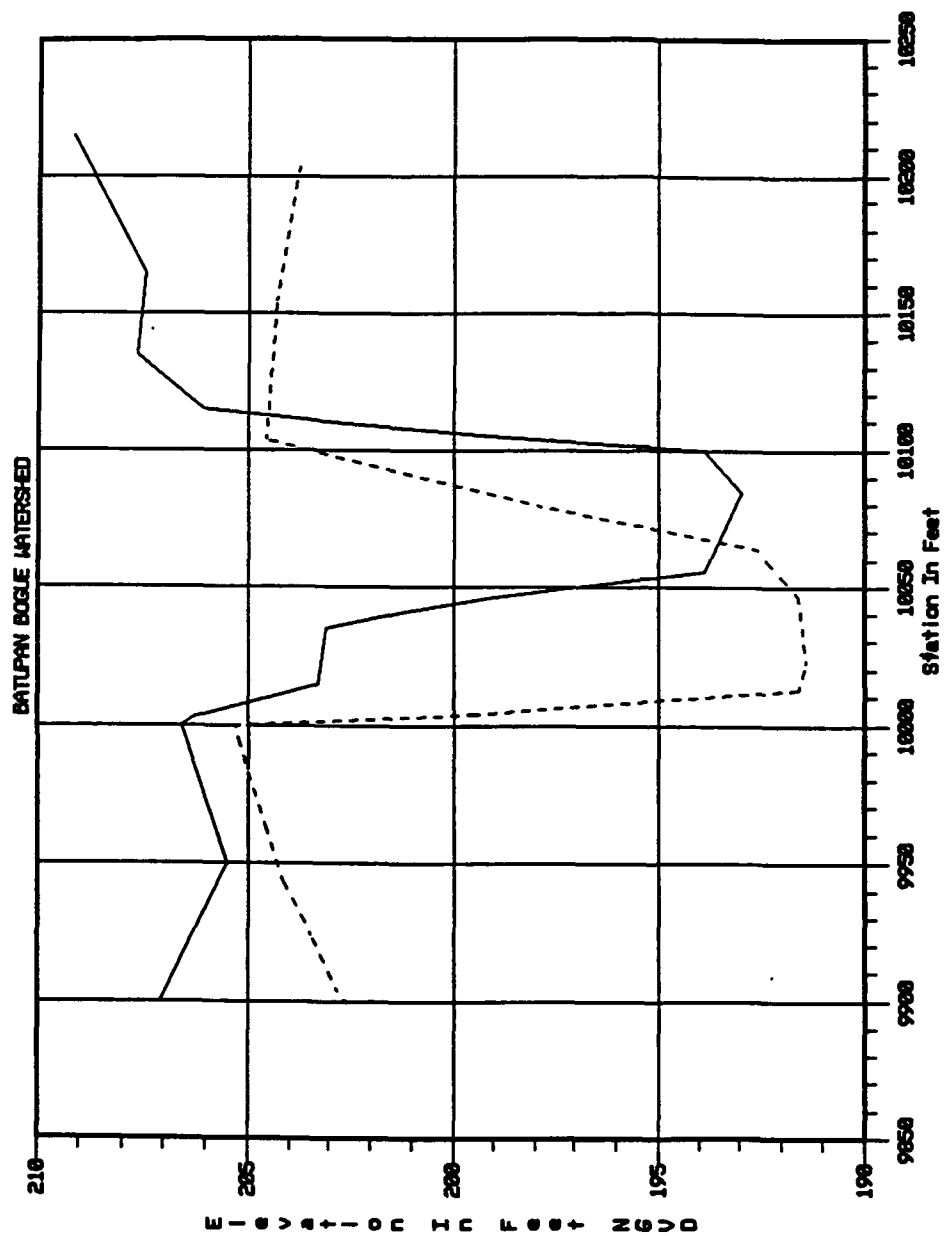
— PERRY 1985 XSEC 98.05
 - - - PERRY 1991 XSEC 11850

The 1985 and 1991 cross sections were surveyed at different locations.



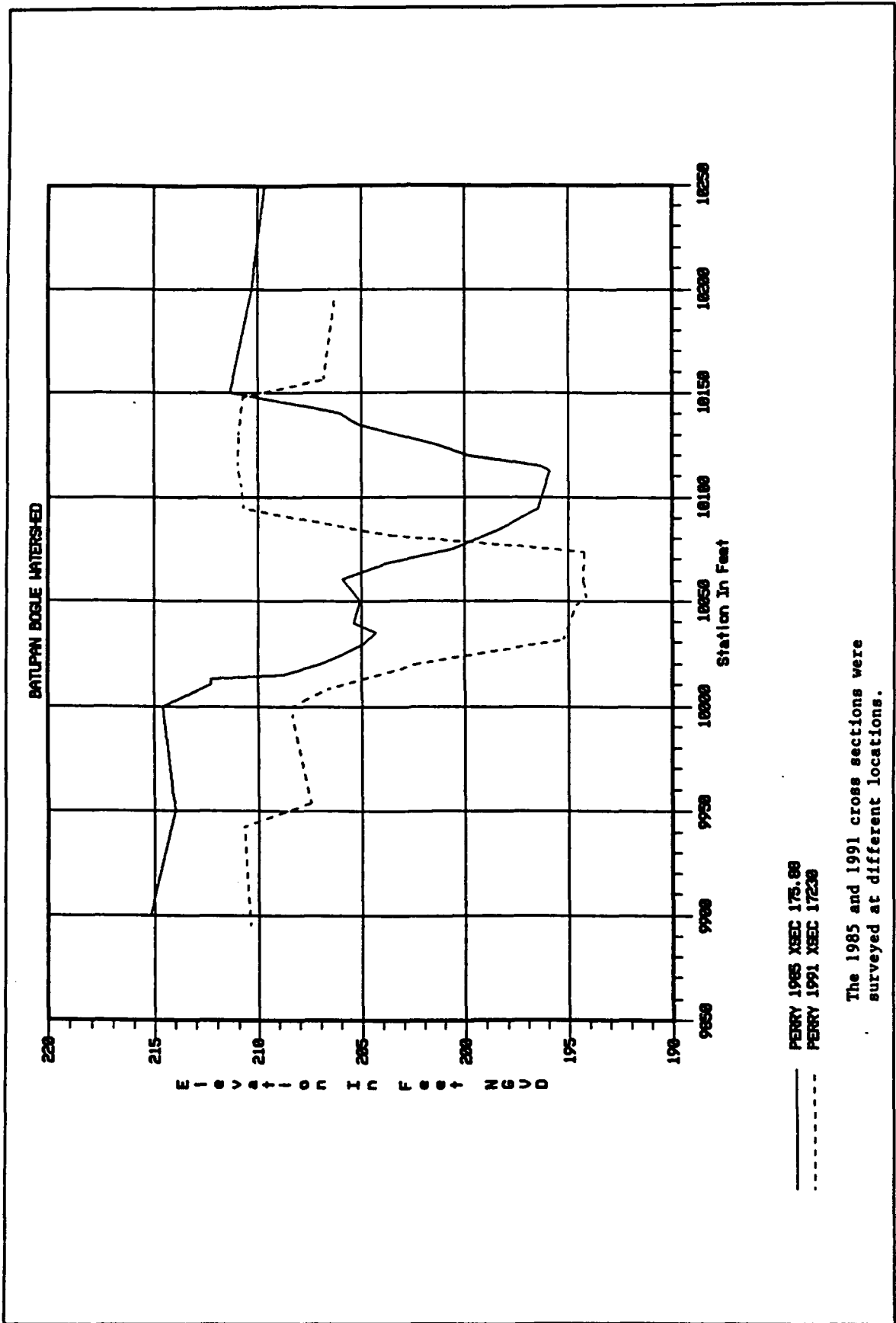
PERRY 1985 XSEC 129.00
 PERRY 1991 XSEC 11750

The 1985 and 1991 cross sections were surveyed at different locations.

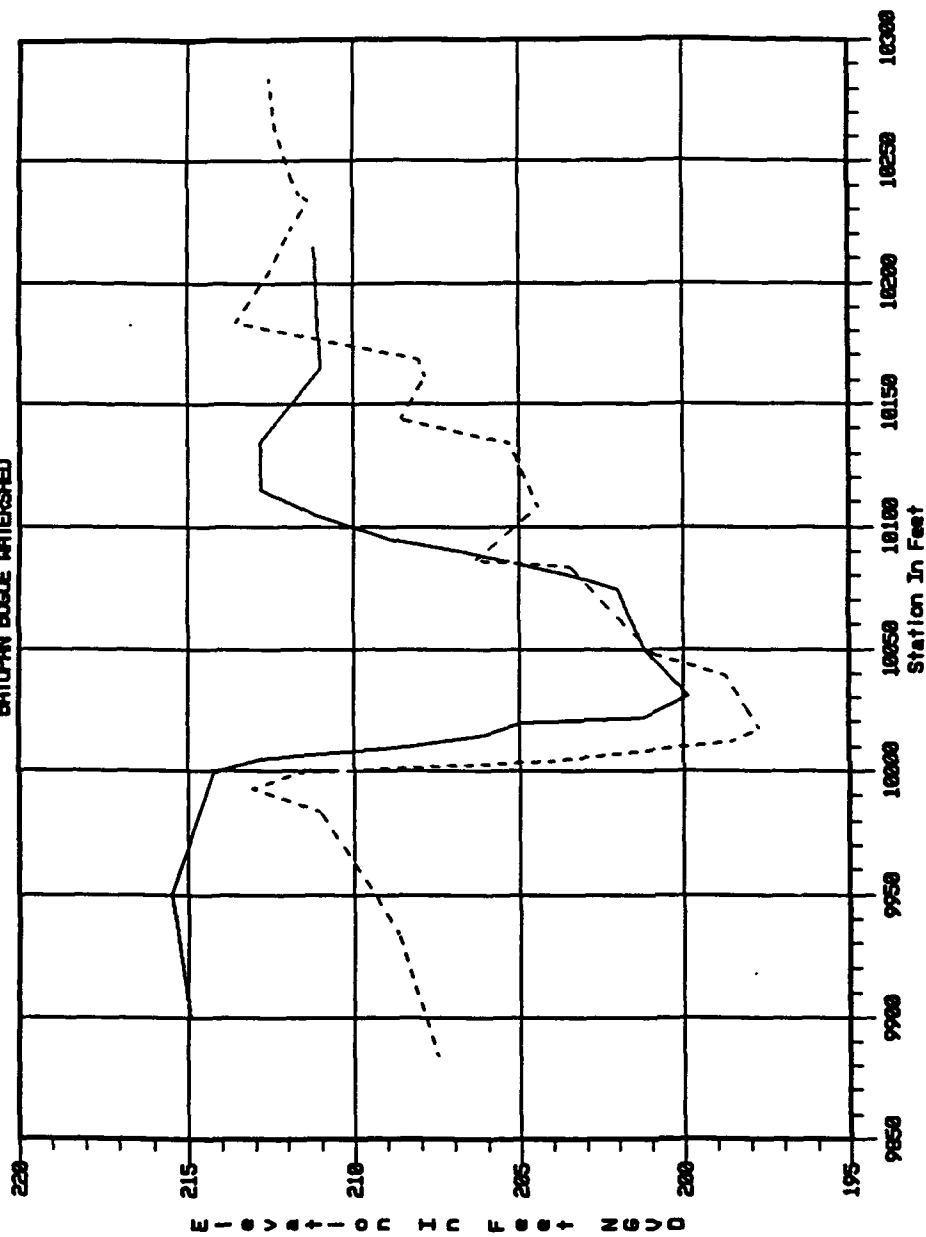


— PERRY 1985 XSEC 149.98
 - - - PERRY 1991 XSEC 14234

The 1985 and 1991 cross sections were surveyed at different locations

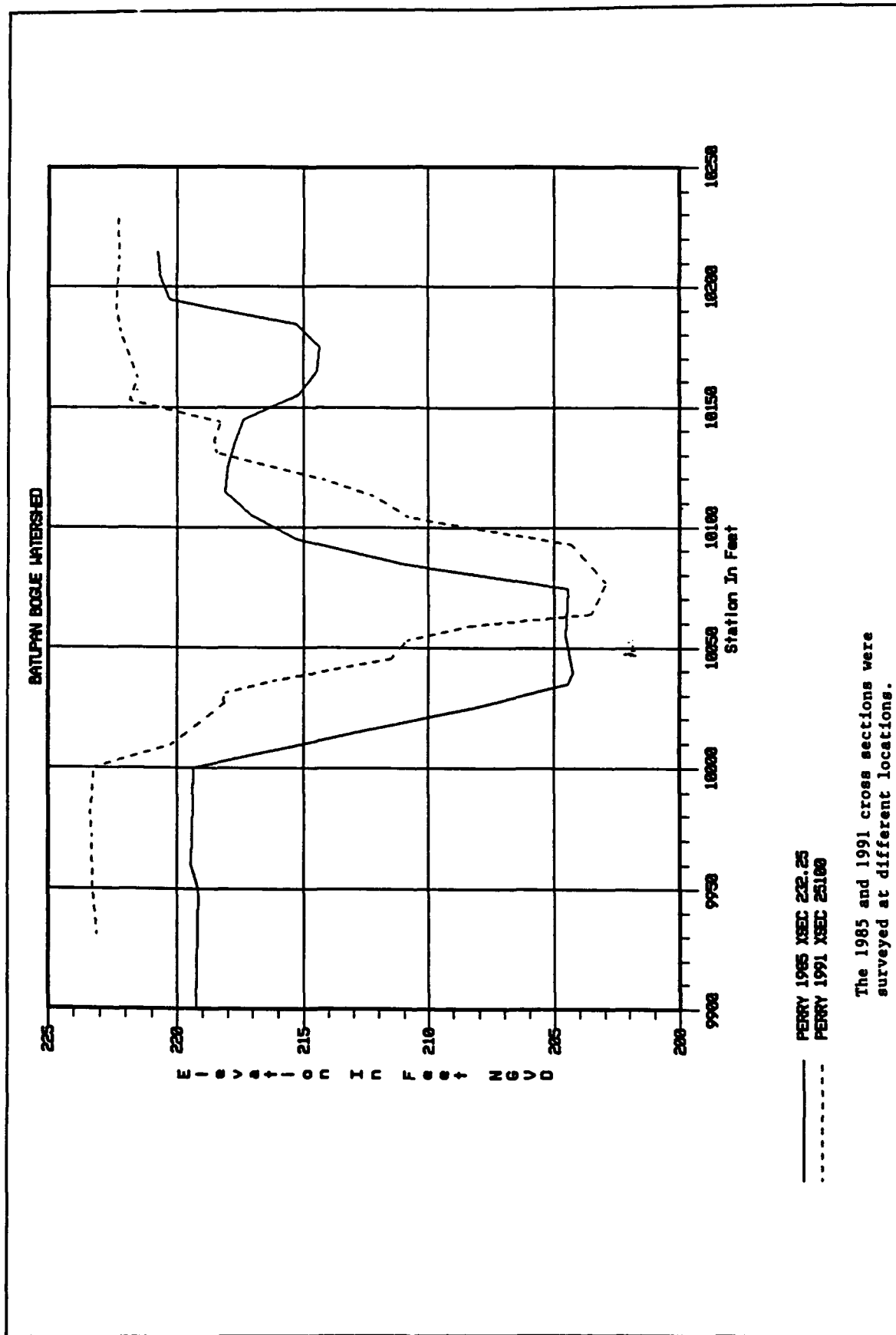


DATUPAN BOGLE WATERSHED

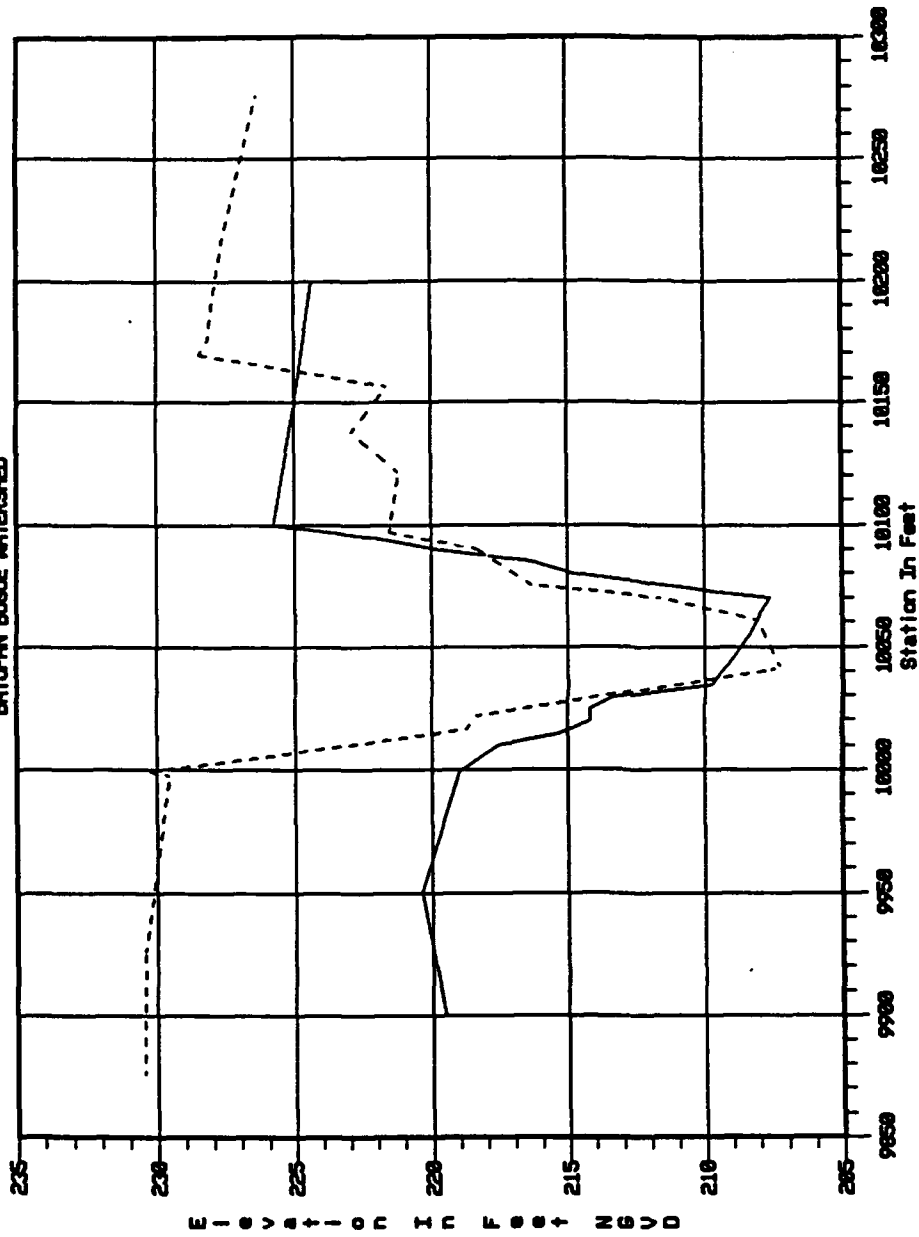


PERRY 1985 XSEC 284.45
 PERRY 1991 XSEC 28200

The 1985 and 1991 cross sections were
 surveyed at different locations.

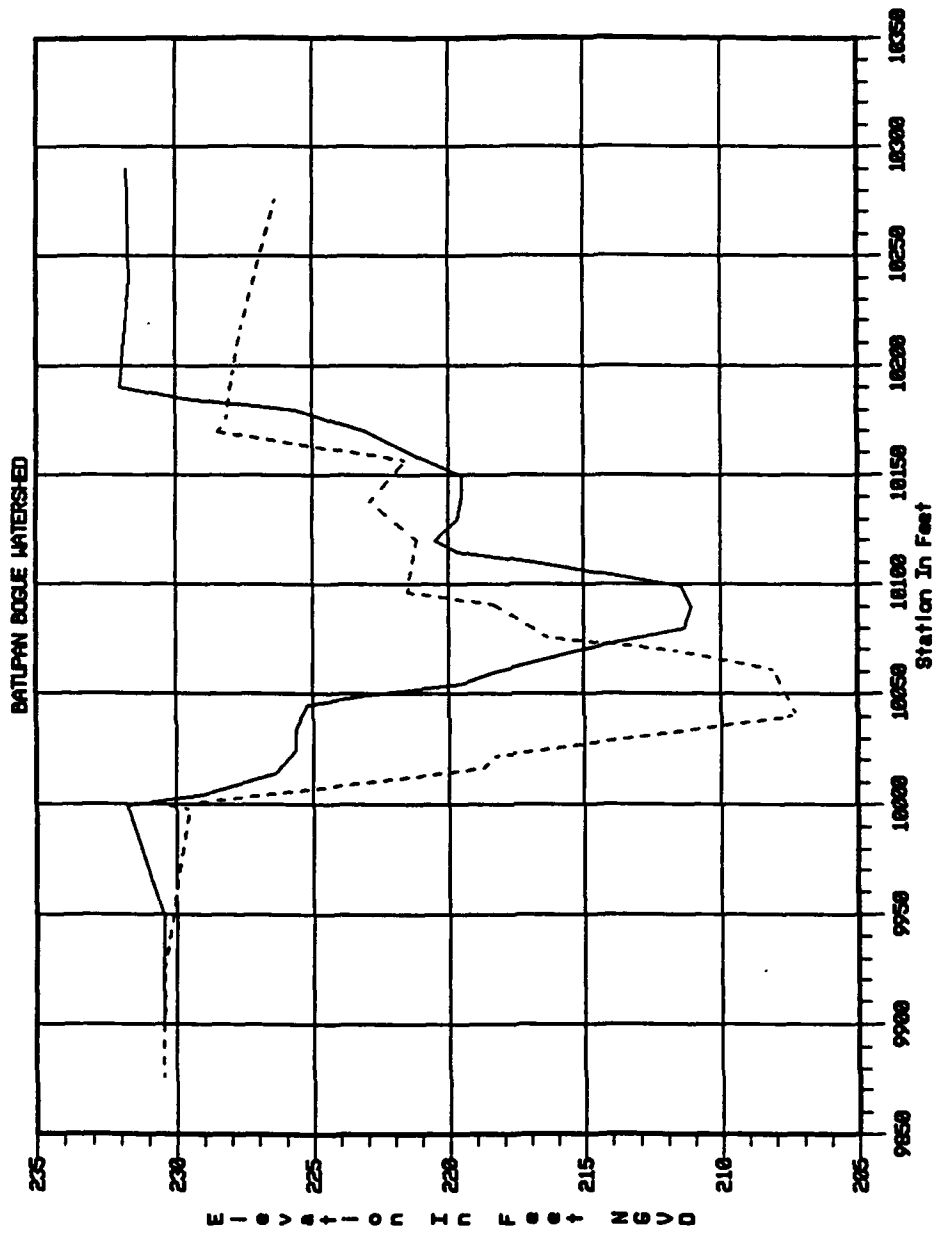


BATUPAN BOGLE WATERSHED



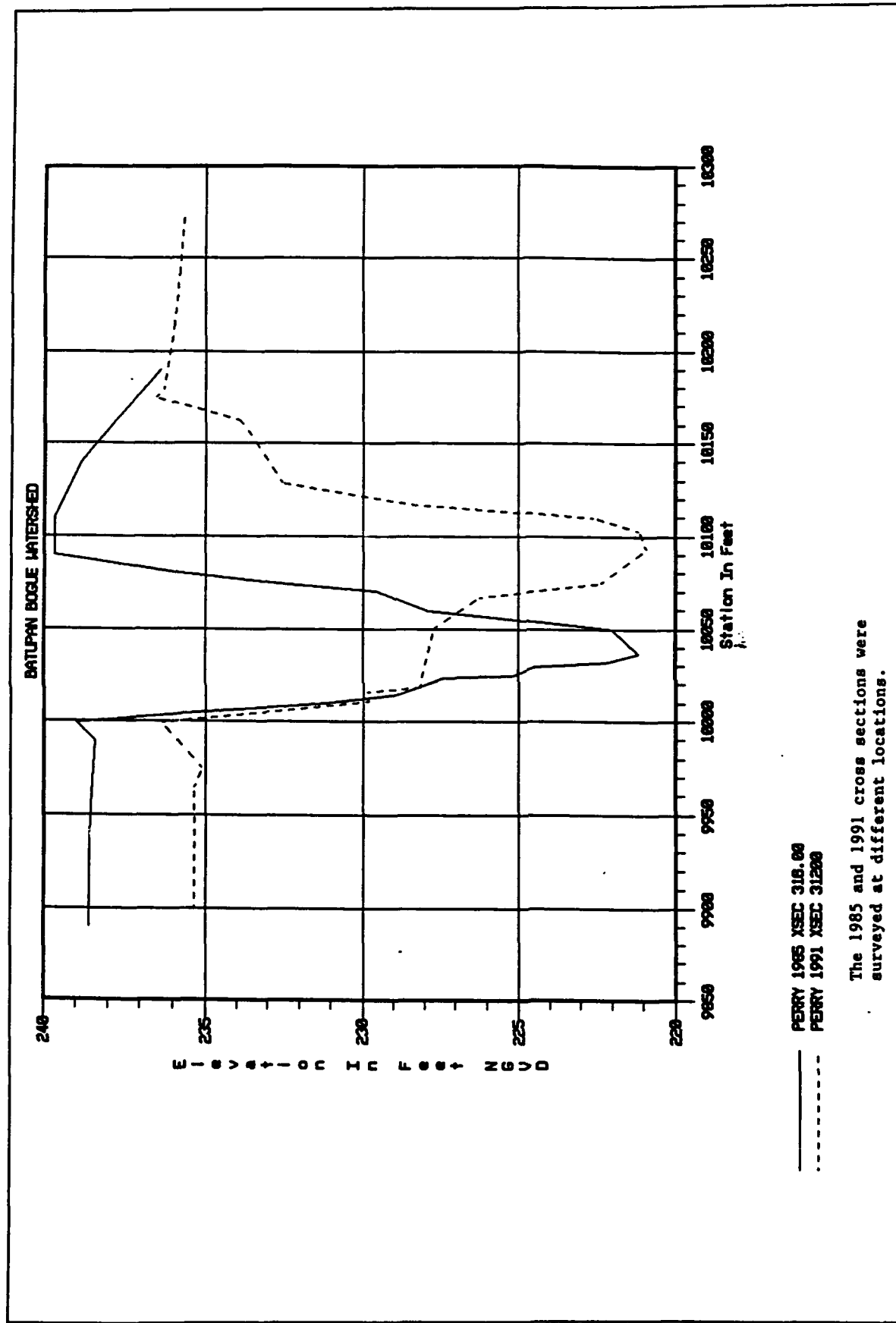
PERRY 1985 XSEC 281.58
 PERRY 1991 XSEC 28800

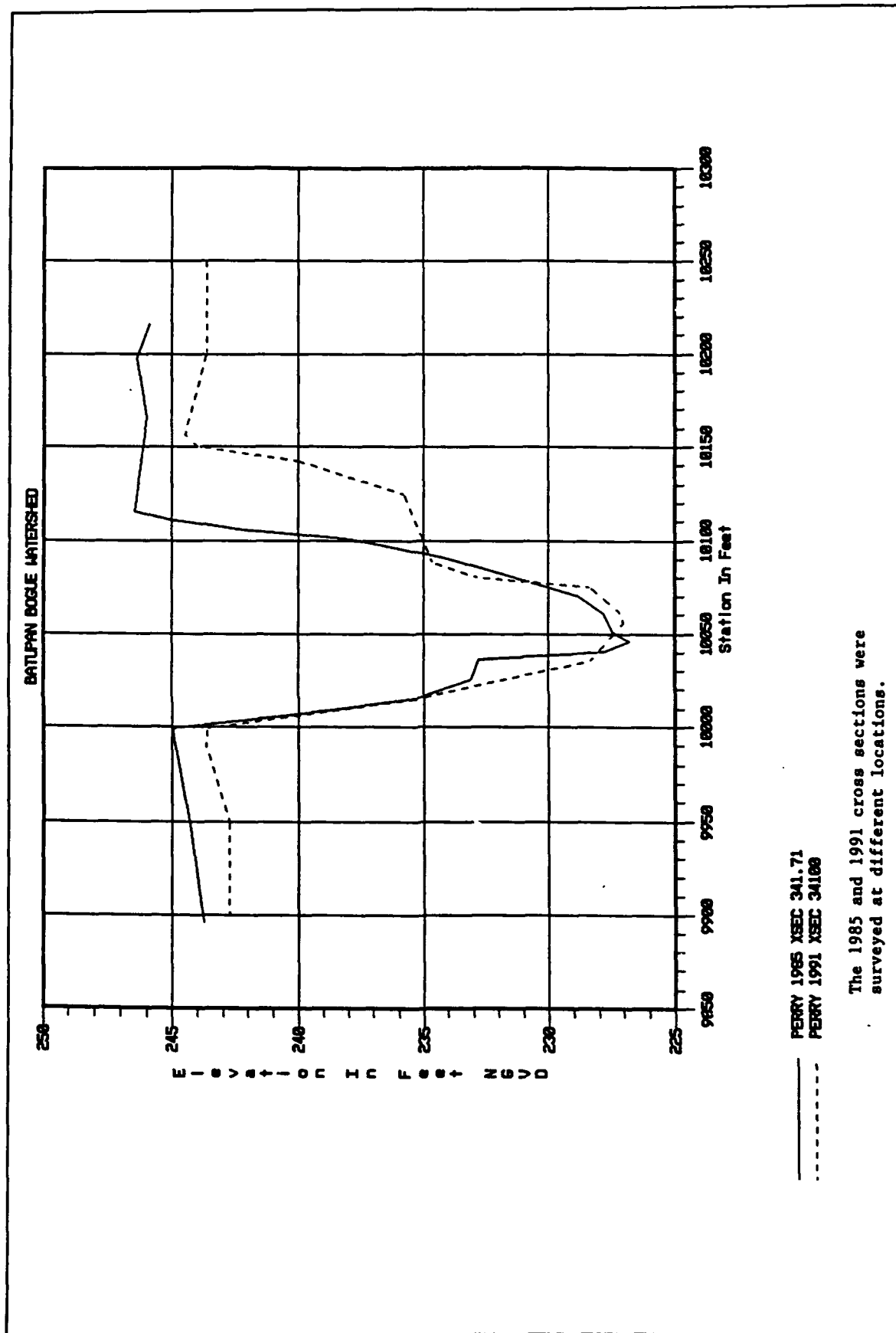
The 1985 and 1991 cross sections were
 surveyed at different locations.



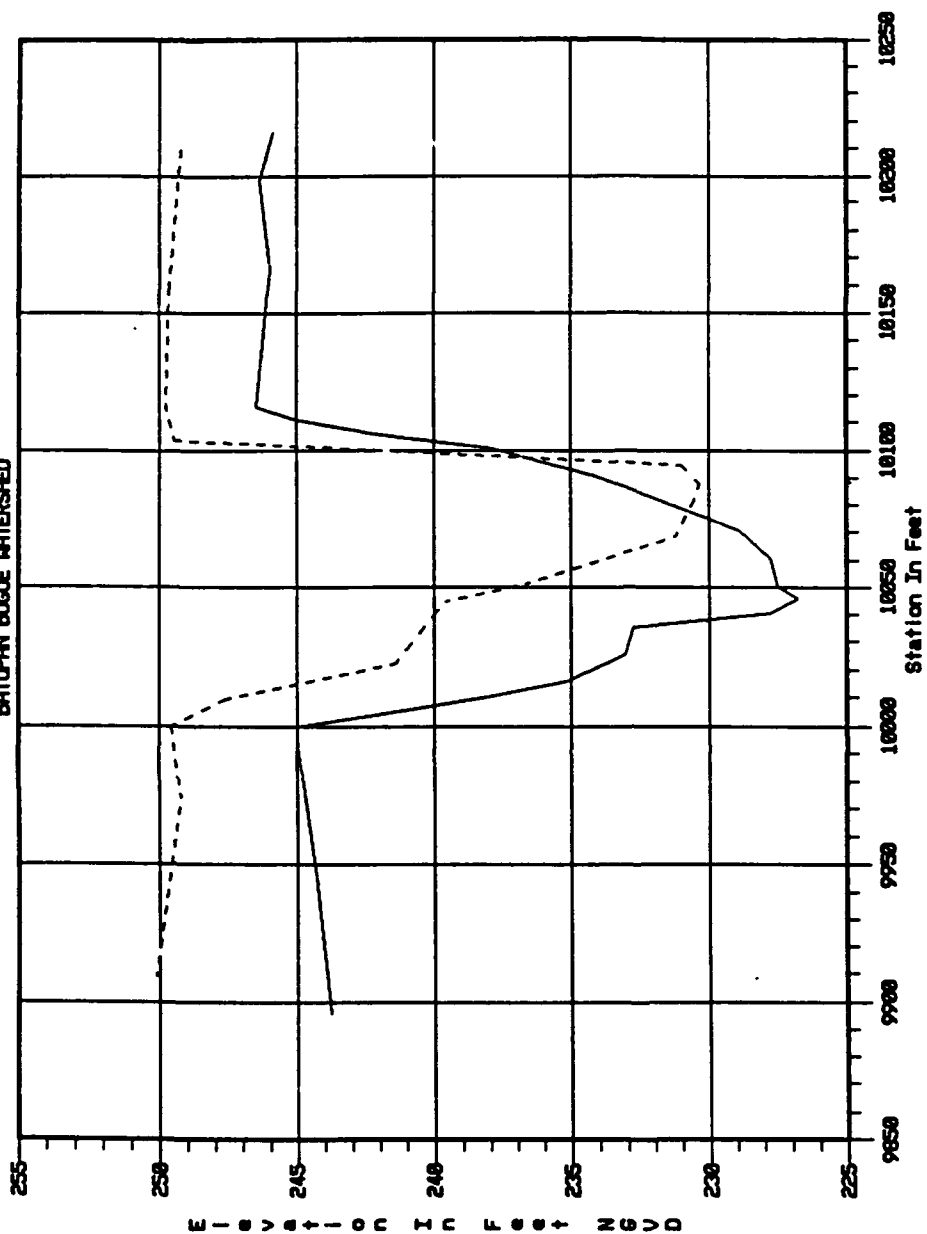
— PERRY 1985 XSEC 250.00
 - - - PERRY 1991 XSEC 20000

The 1985 and 1991 cross sections were surveyed at different locations.



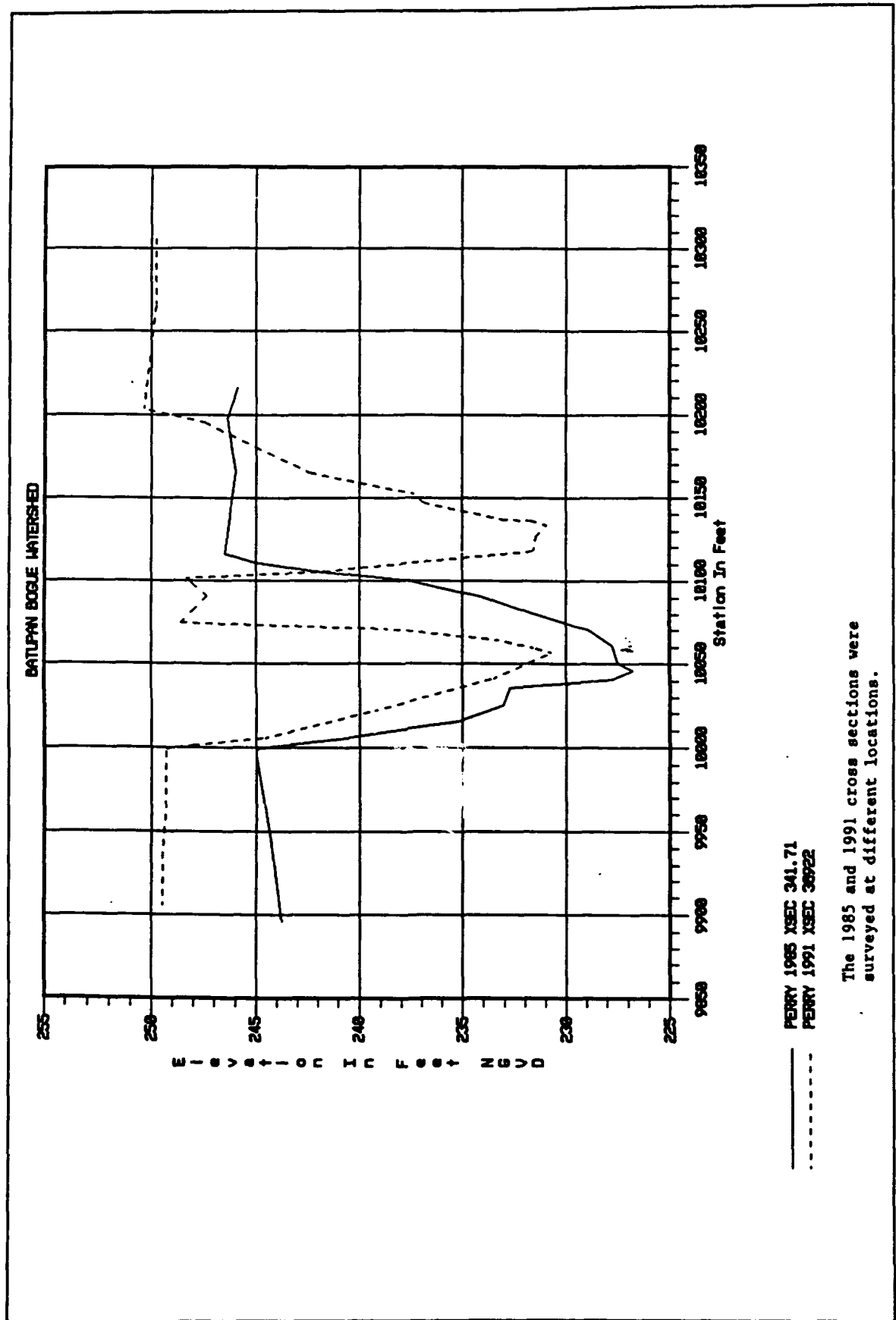


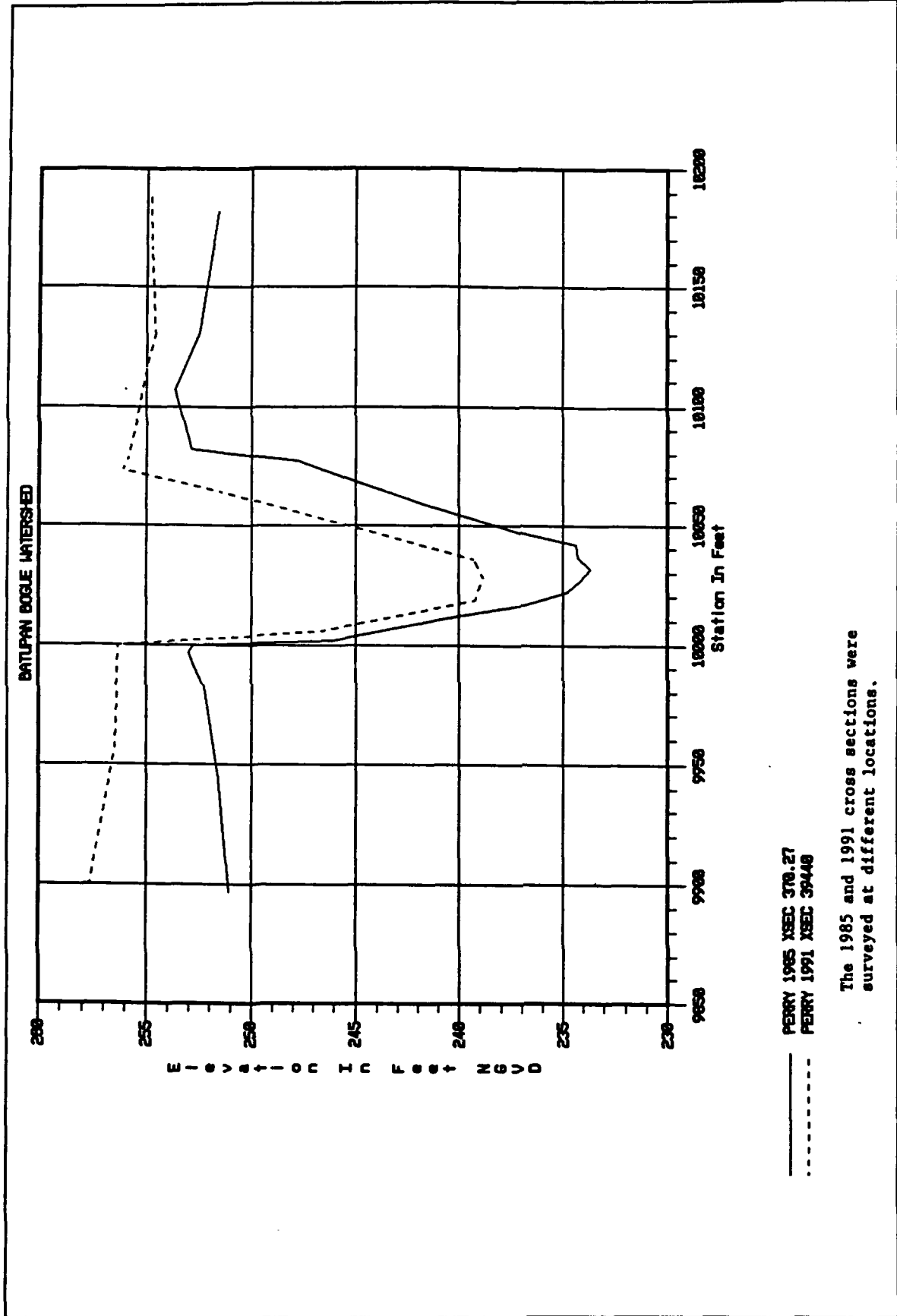
BATUPAN BOGLE WATERSHED

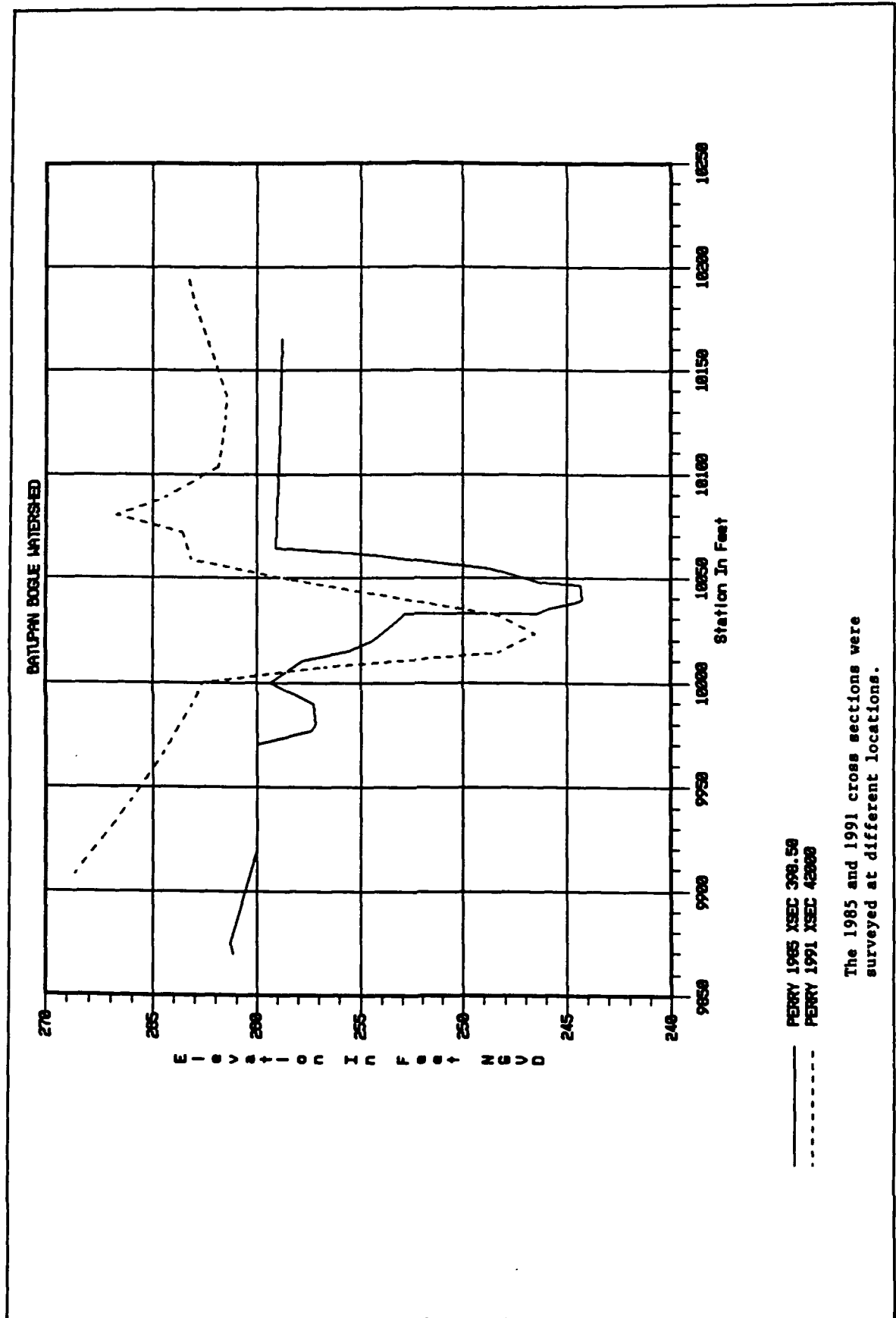


— PERRY 1985 XSEC 341.71
 - - - PERRY 1991 XSEC 36877

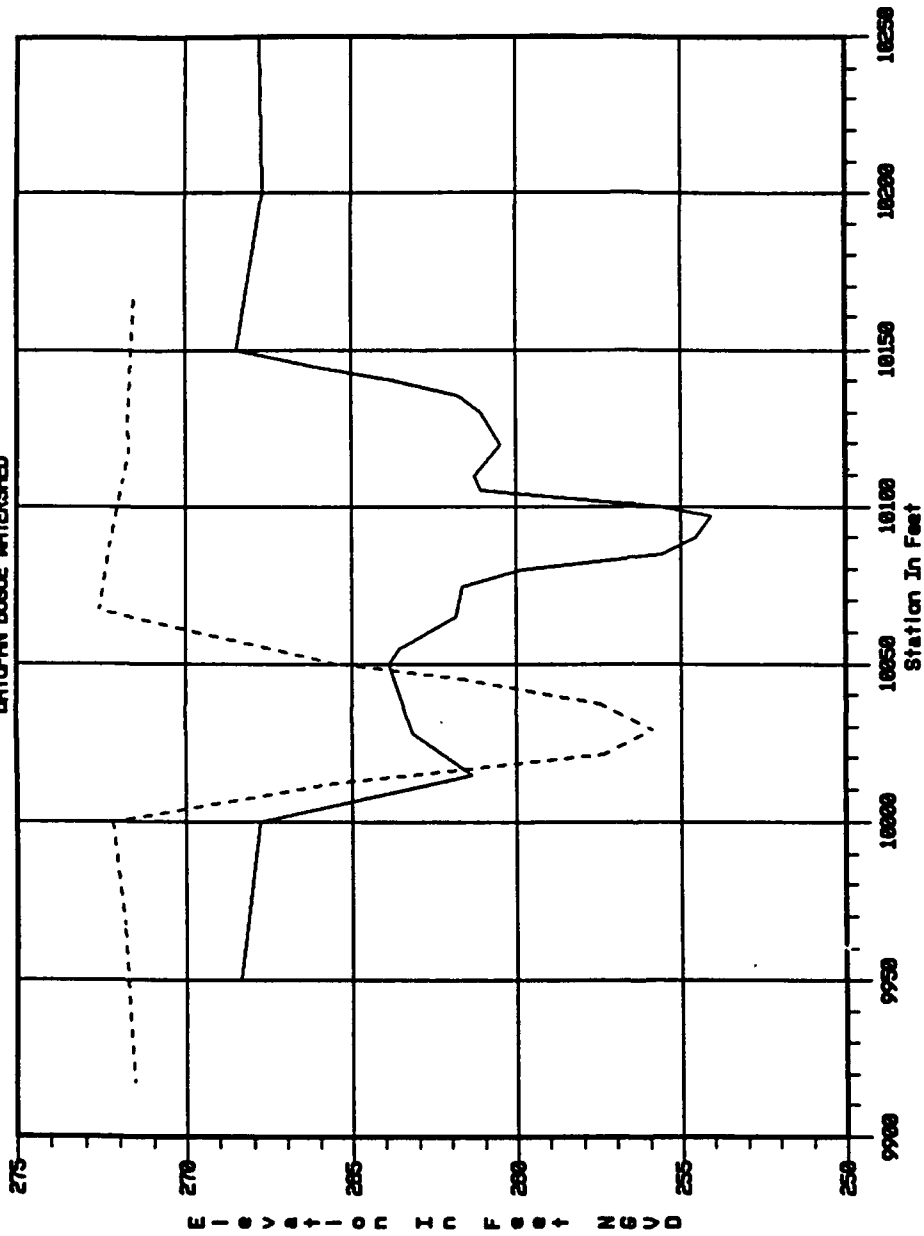
The 1985 and 1991 cross sections were surveyed at different locations.





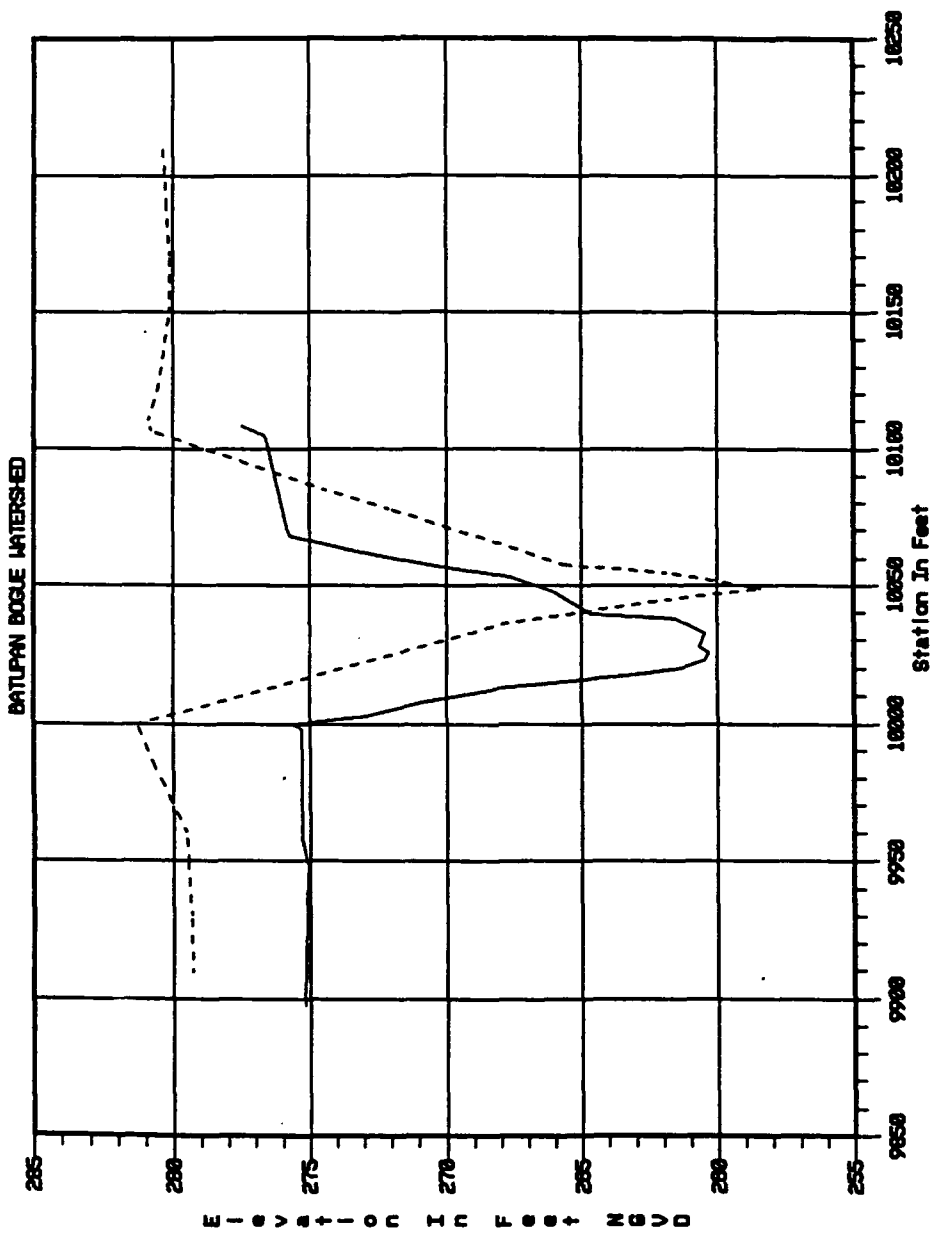


BATUPAN BOGLE WATERSHED



— PERRY 1985 XSEC 425.00
 - - - PERRY 1991 XSEC 44500

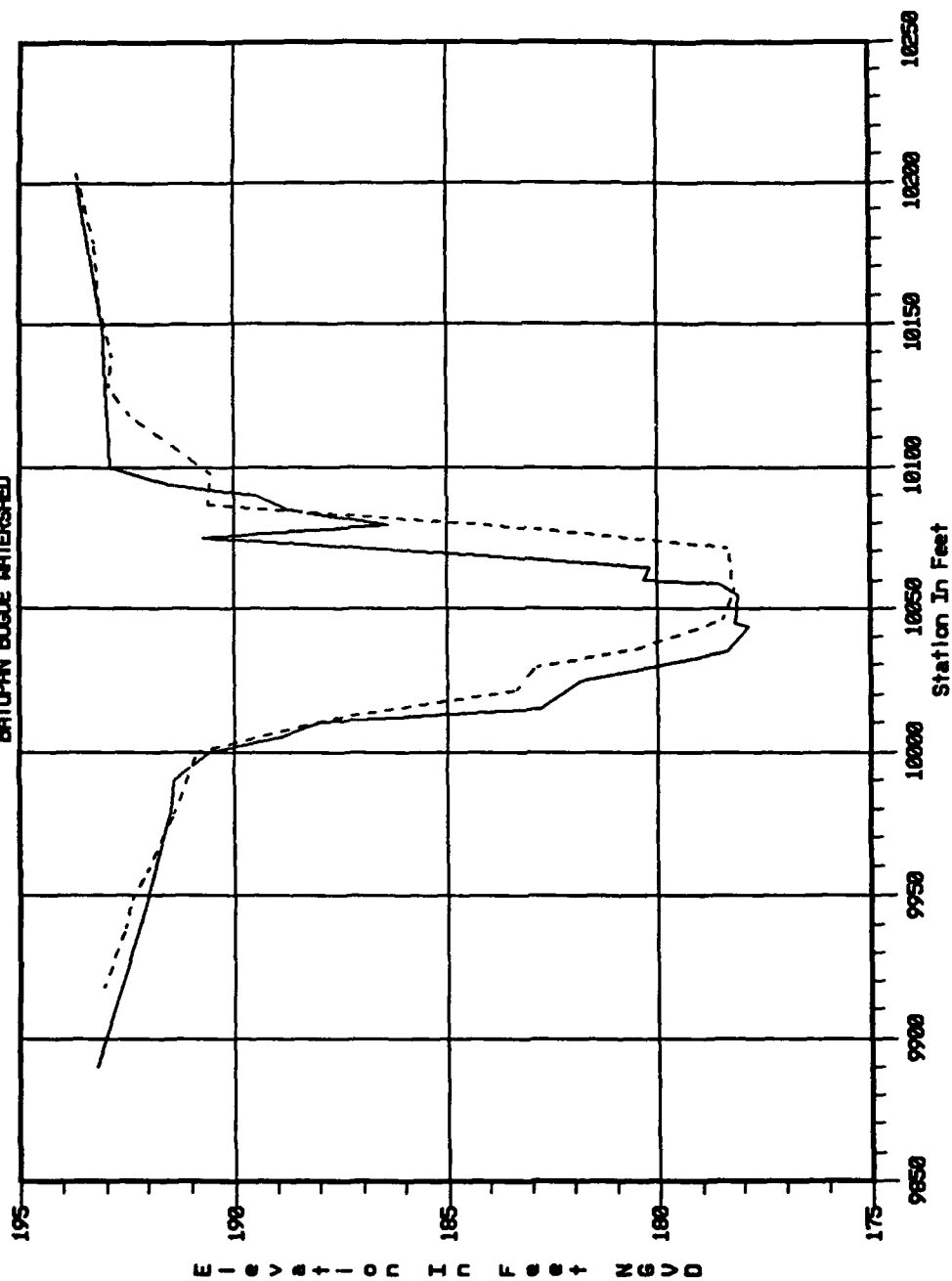
The 1985 and 1991 cross sections were surveyed at different locations.



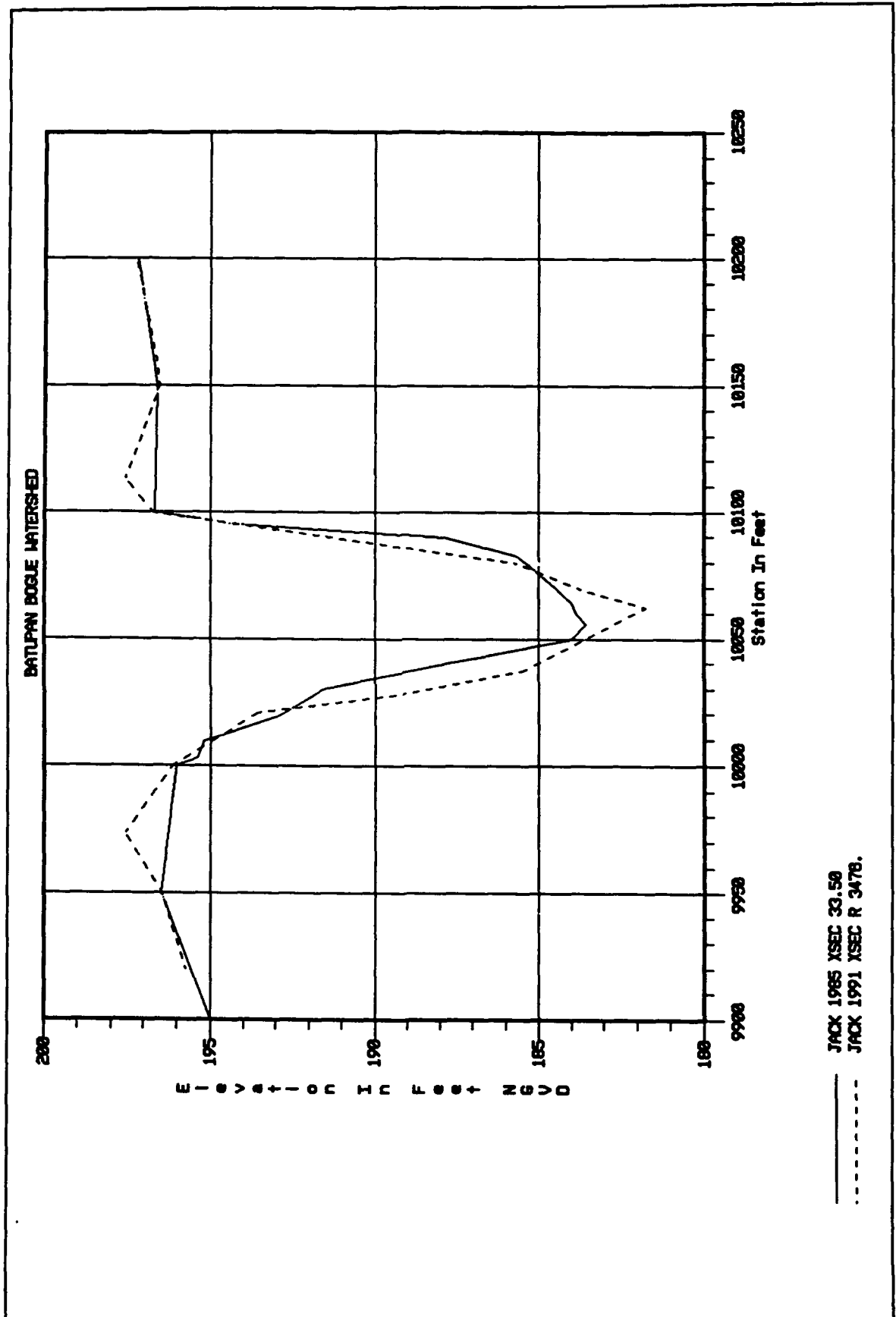
— PERRY 1985 XSEC 447.14
 - - - PERRY 1991 XSEC 46508

The 1985 and 1991 cross sections were surveyed at different locations.

BATUPAN BOGUE WATERSHED

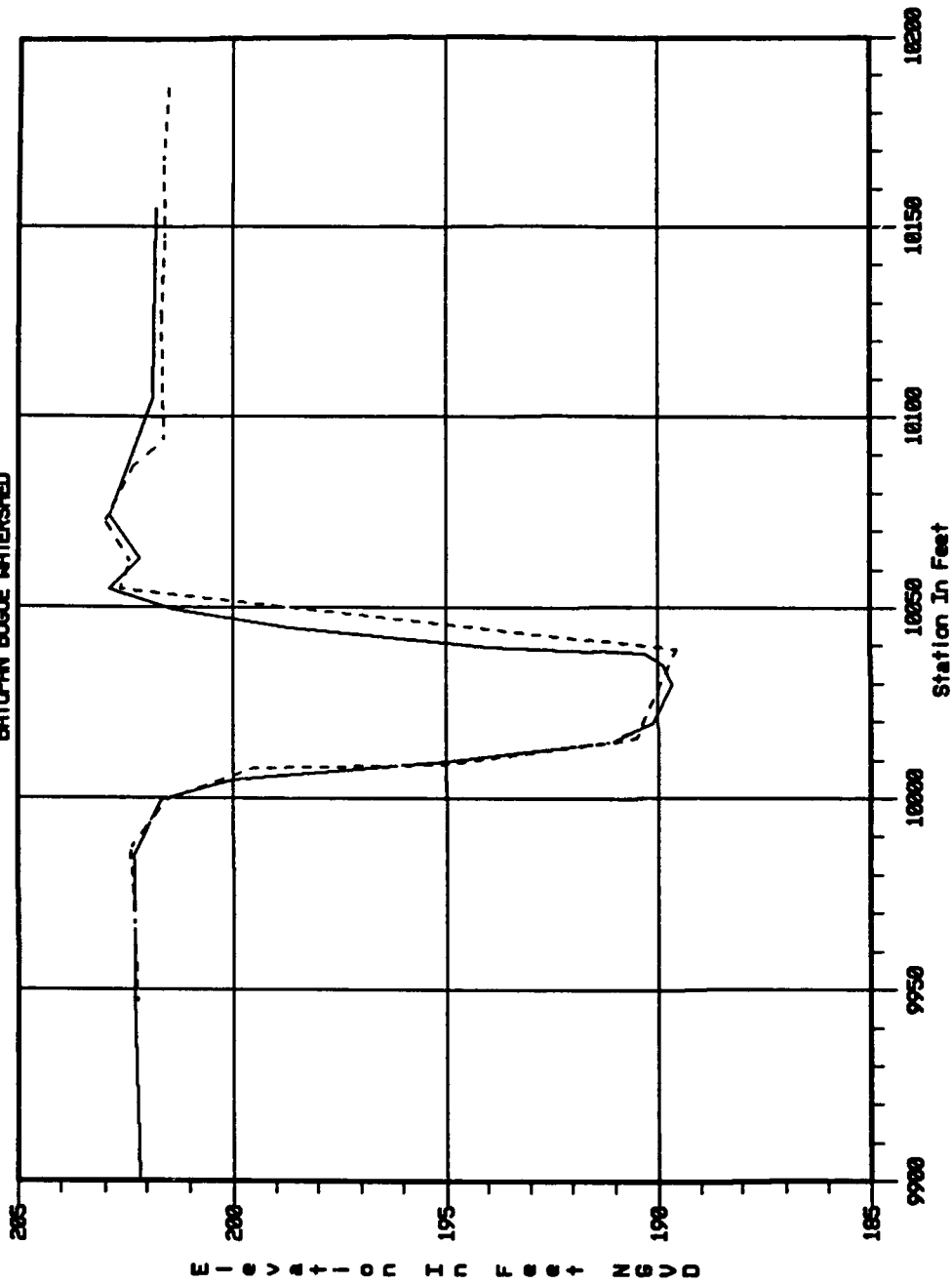


— JACK 1965 XSEC 8.00
 - - - JACK 1991 XSEC R 800.



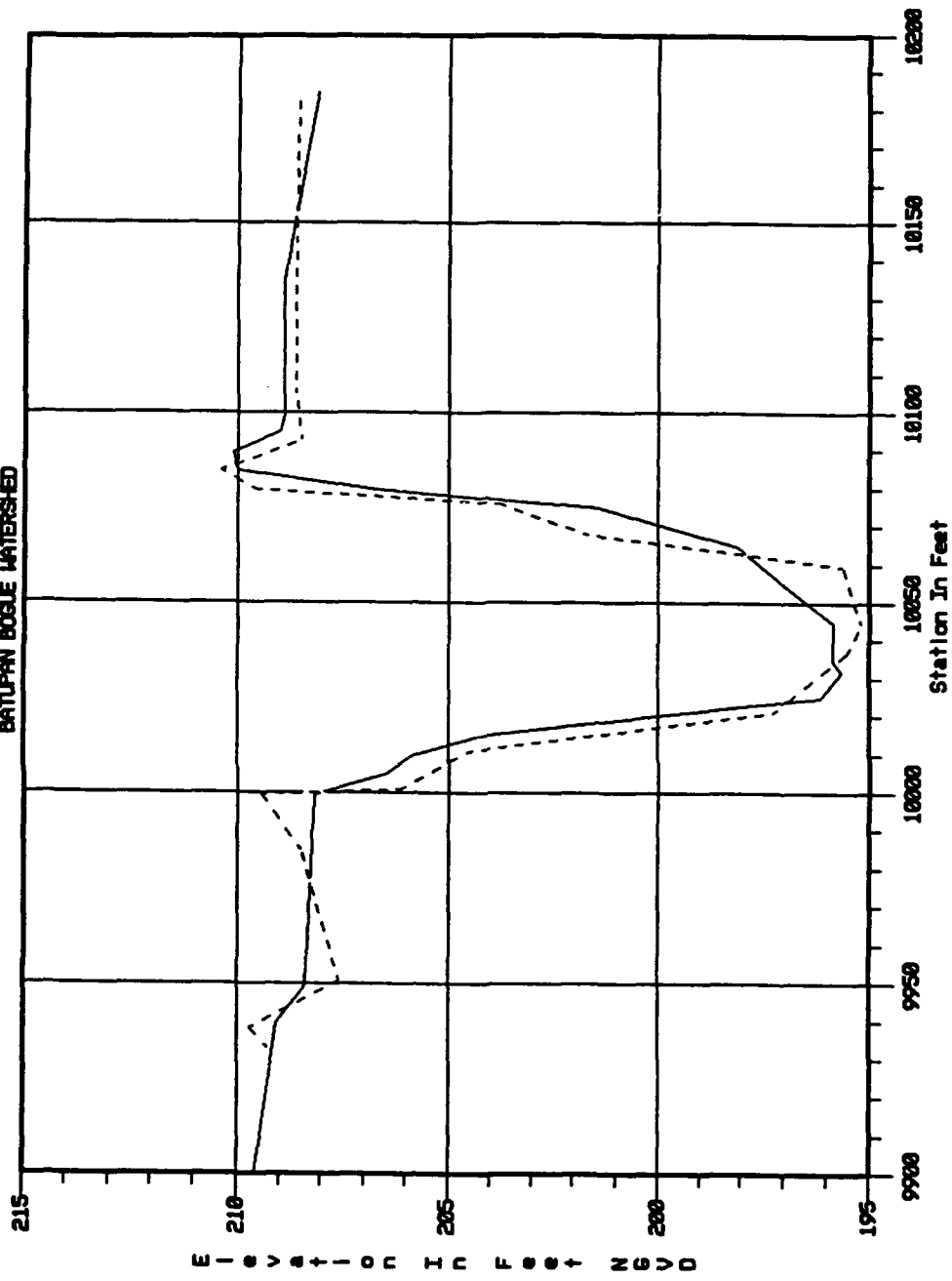
— JACK 1985 XSEC 33.50
- - - JACK 1991 XSEC R 3470.

BATUPAN BOGLE WATERSHED



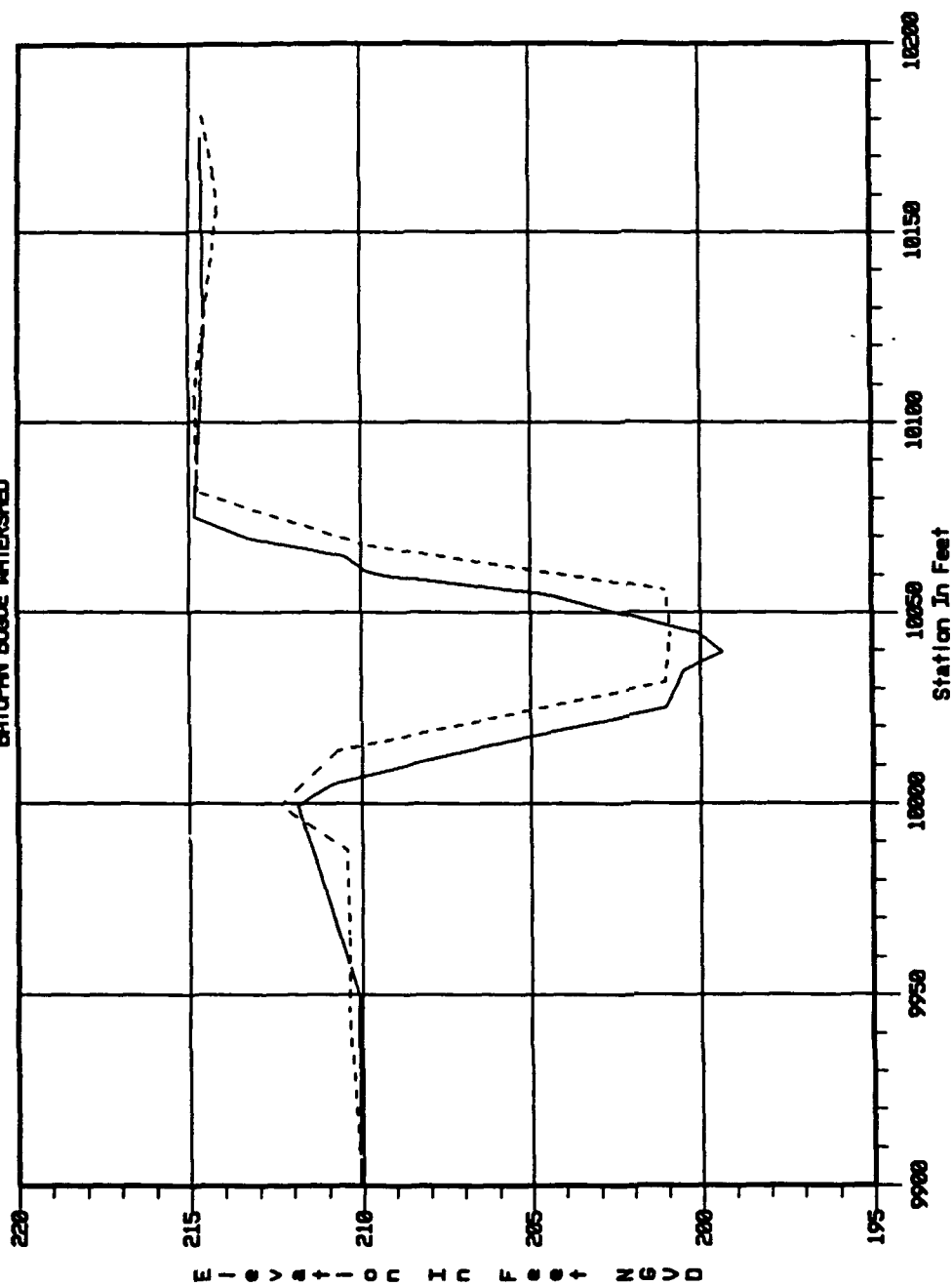
— JACK 1985 XSEC 83.00
 - - - JACK 1991 XSEC R 8354.

BATUPAN BOGLE WATERSHED

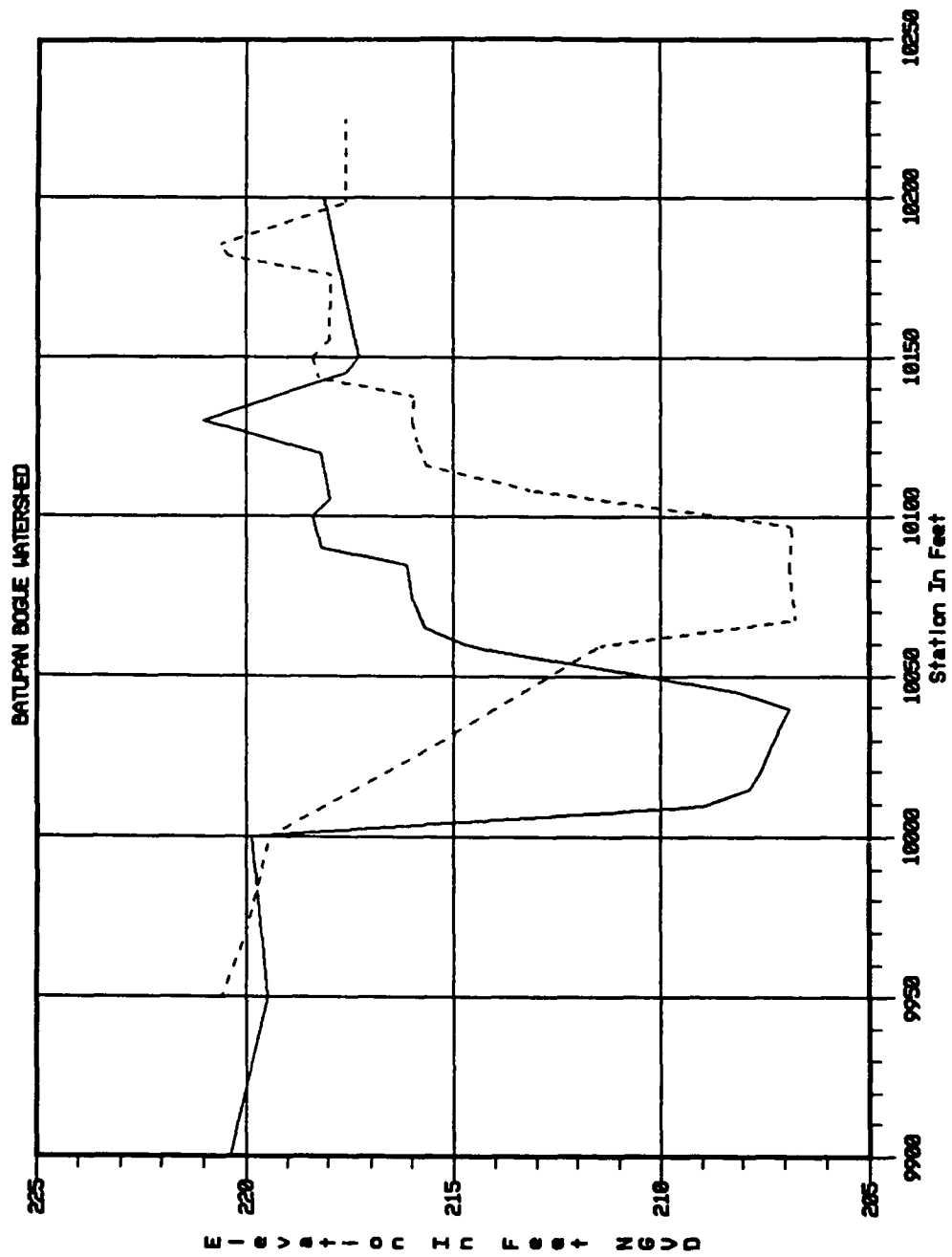


JACK 1985 XSEC 92.87
 JACK 1991 XSEC R 9382

BATUPAN BOGIE WATERSHED



— JACK 1985 XSEC 119.30
 - - - JACK 1991 XSEC R 12245.



— JACK 1985 XSEC 146.14
- - - JACK 1991 XSEC R 15000.

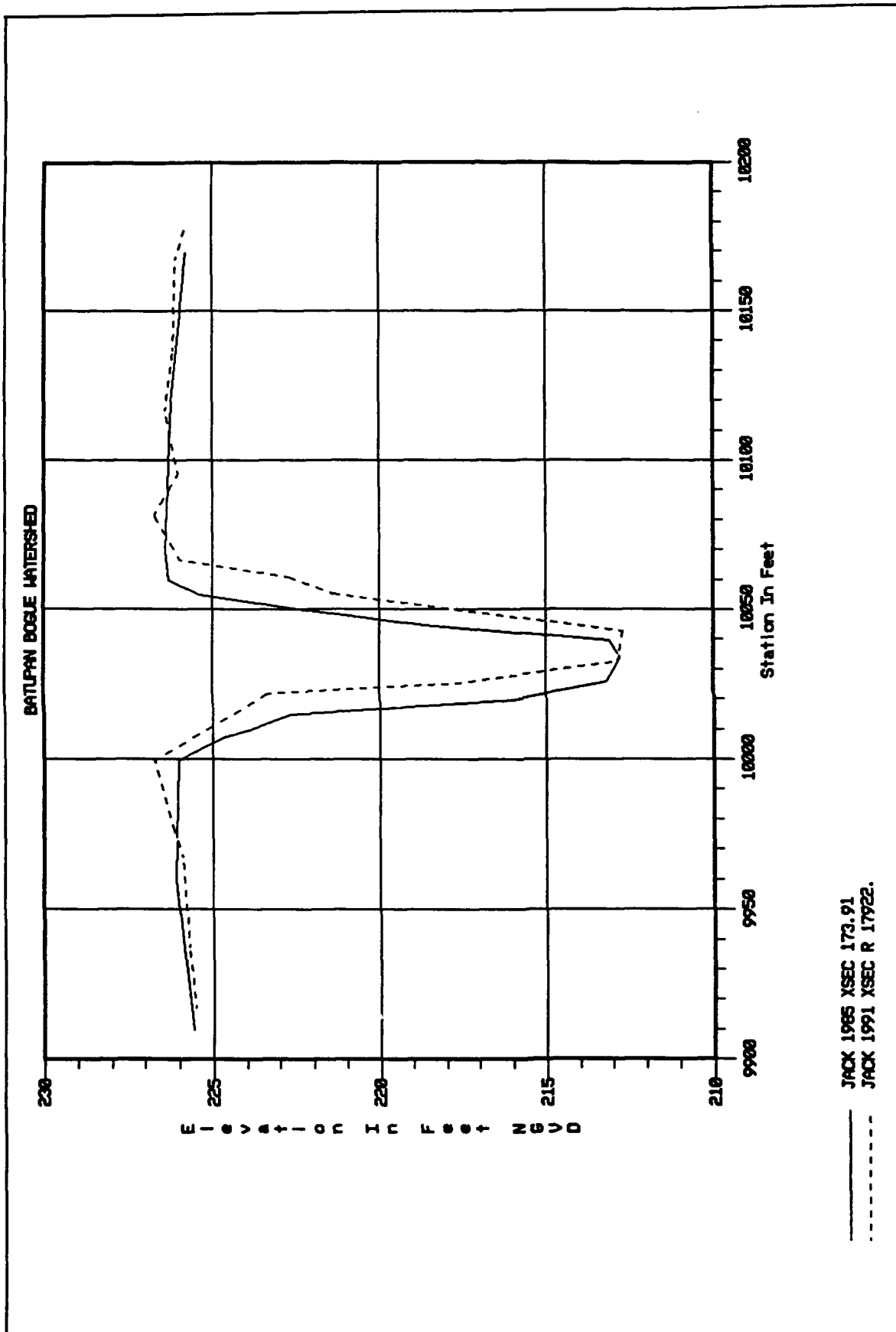
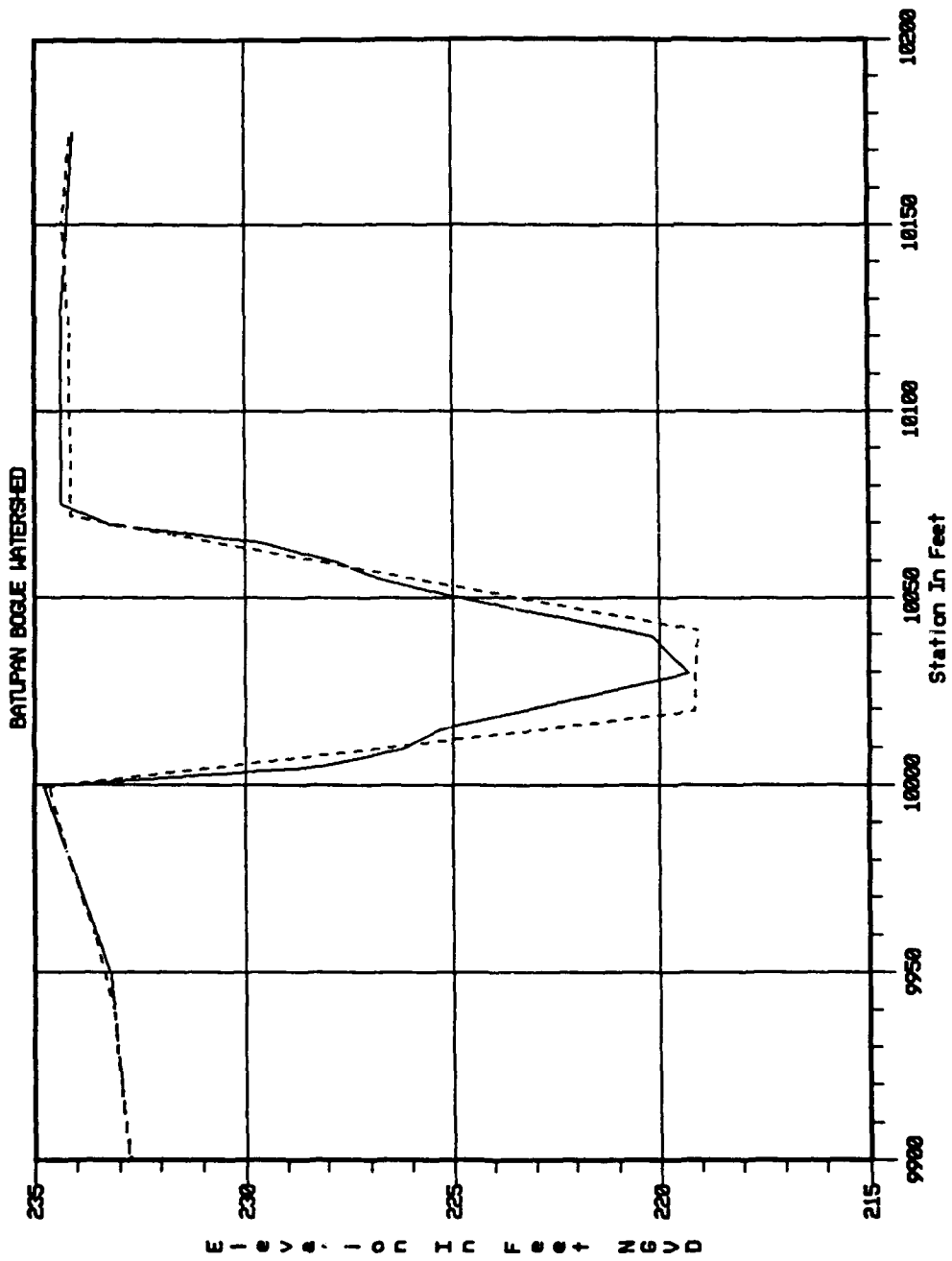
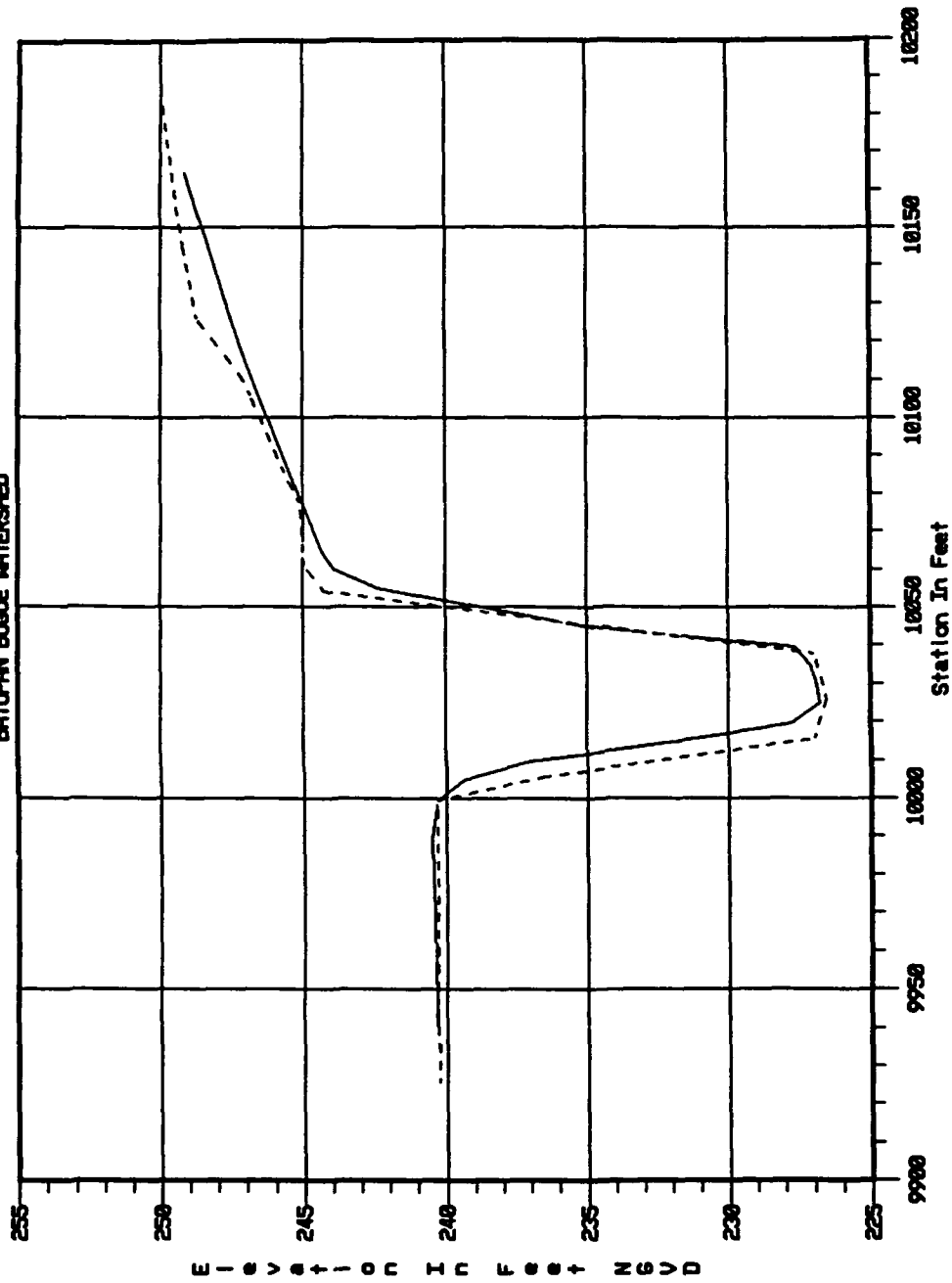


PLATE C88

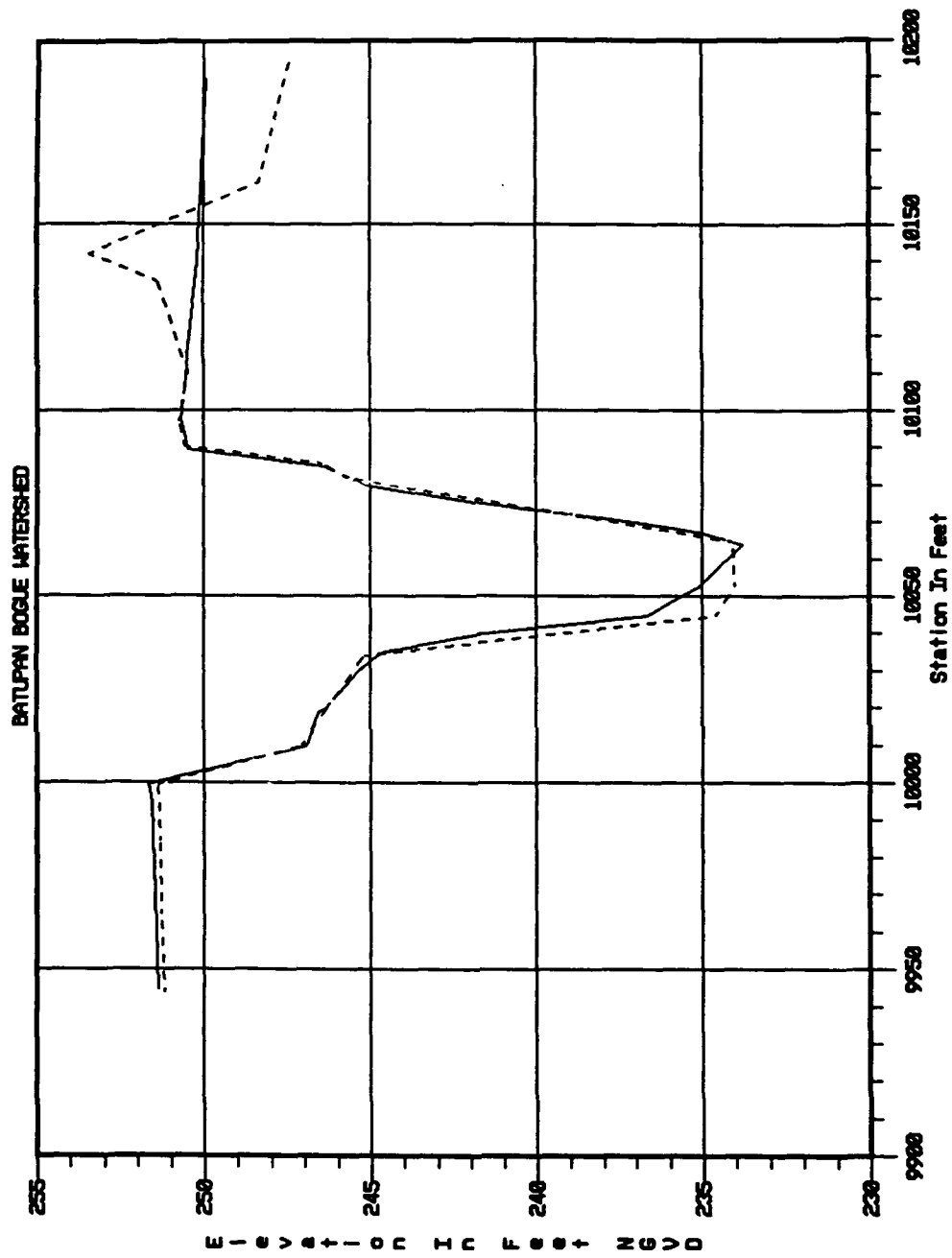


— JACK 1985 XSEC 200.74
 - - - JACK 1991 XSEC R 20700.

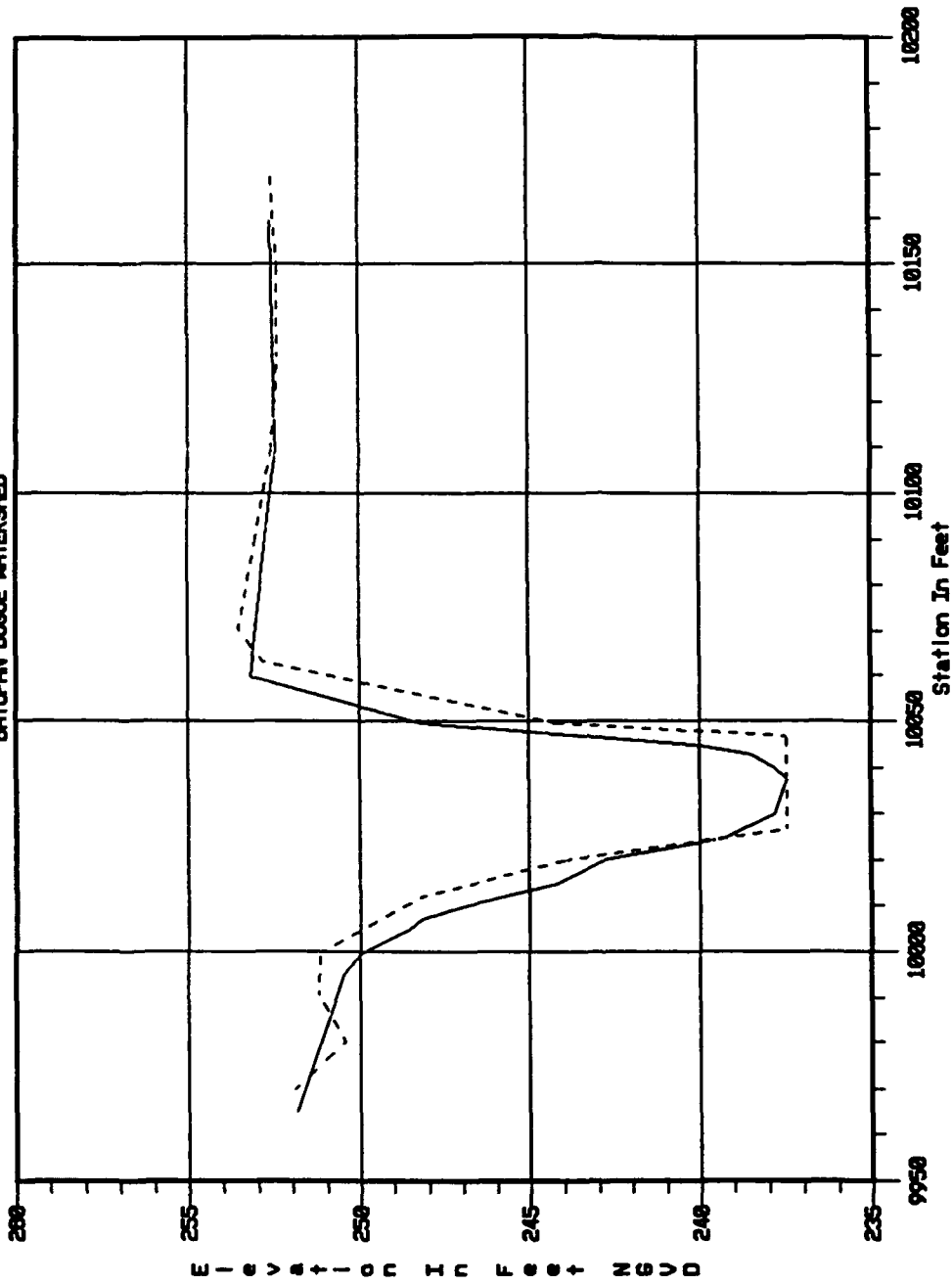
BATUPAN BOULE WATERSHED



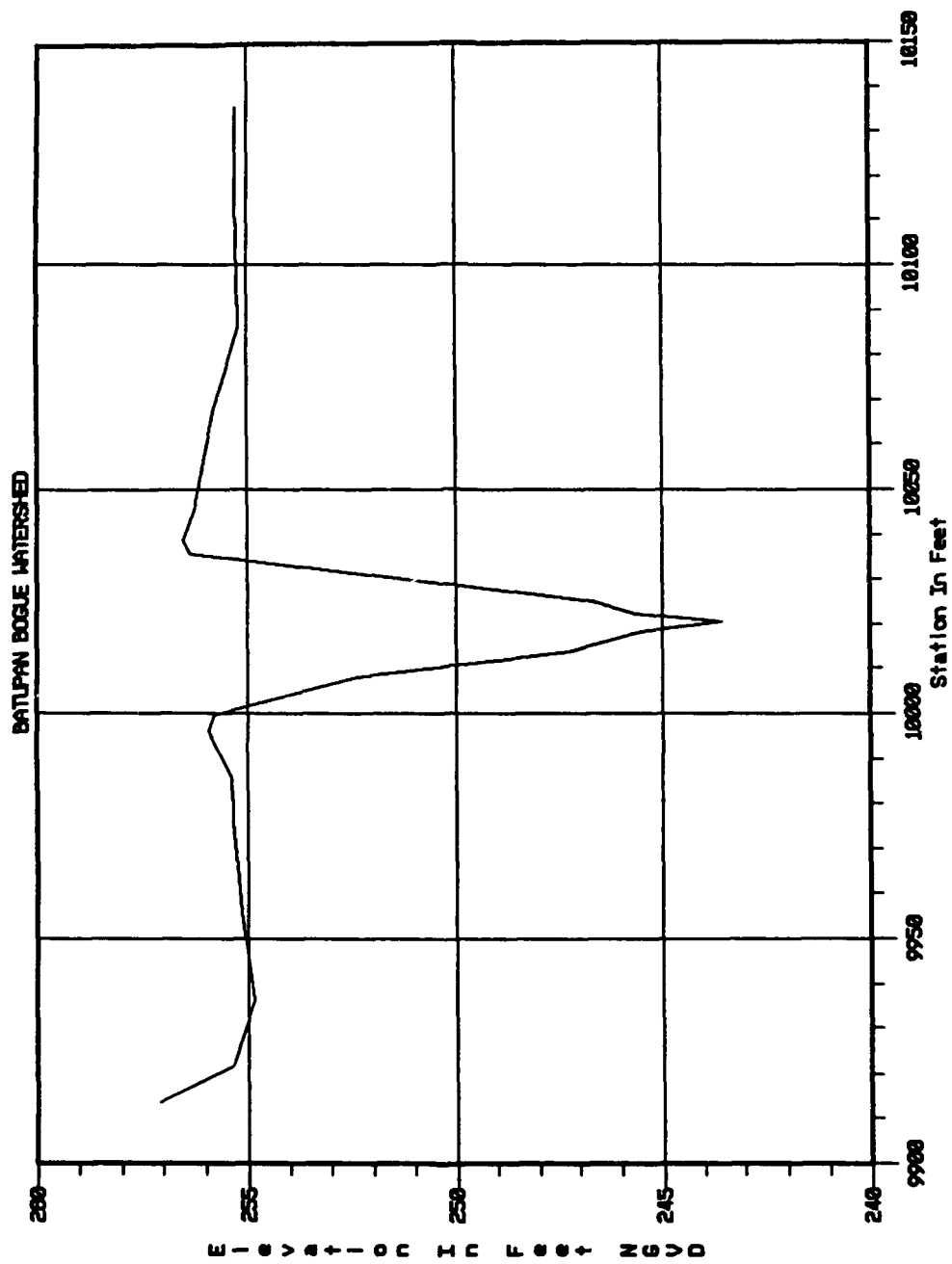
JACK 1985 XSEC 232.48
JACK 1991 XSEC R 24012.



BATUPAN BOGLE WATERSHED

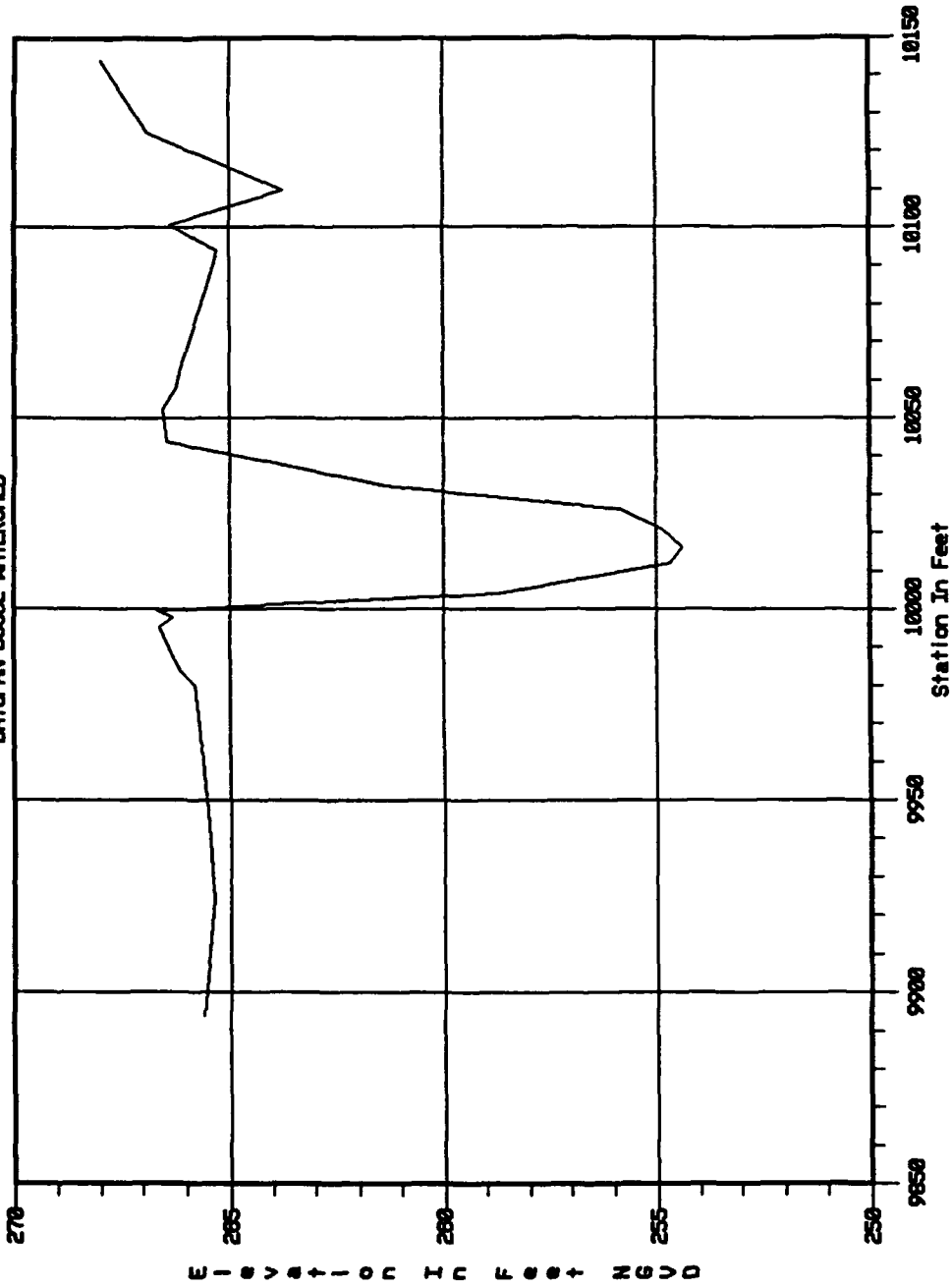


— JACK 1985 XSEC 289.00
 - - - JACK 1991 XSEC R 27859.

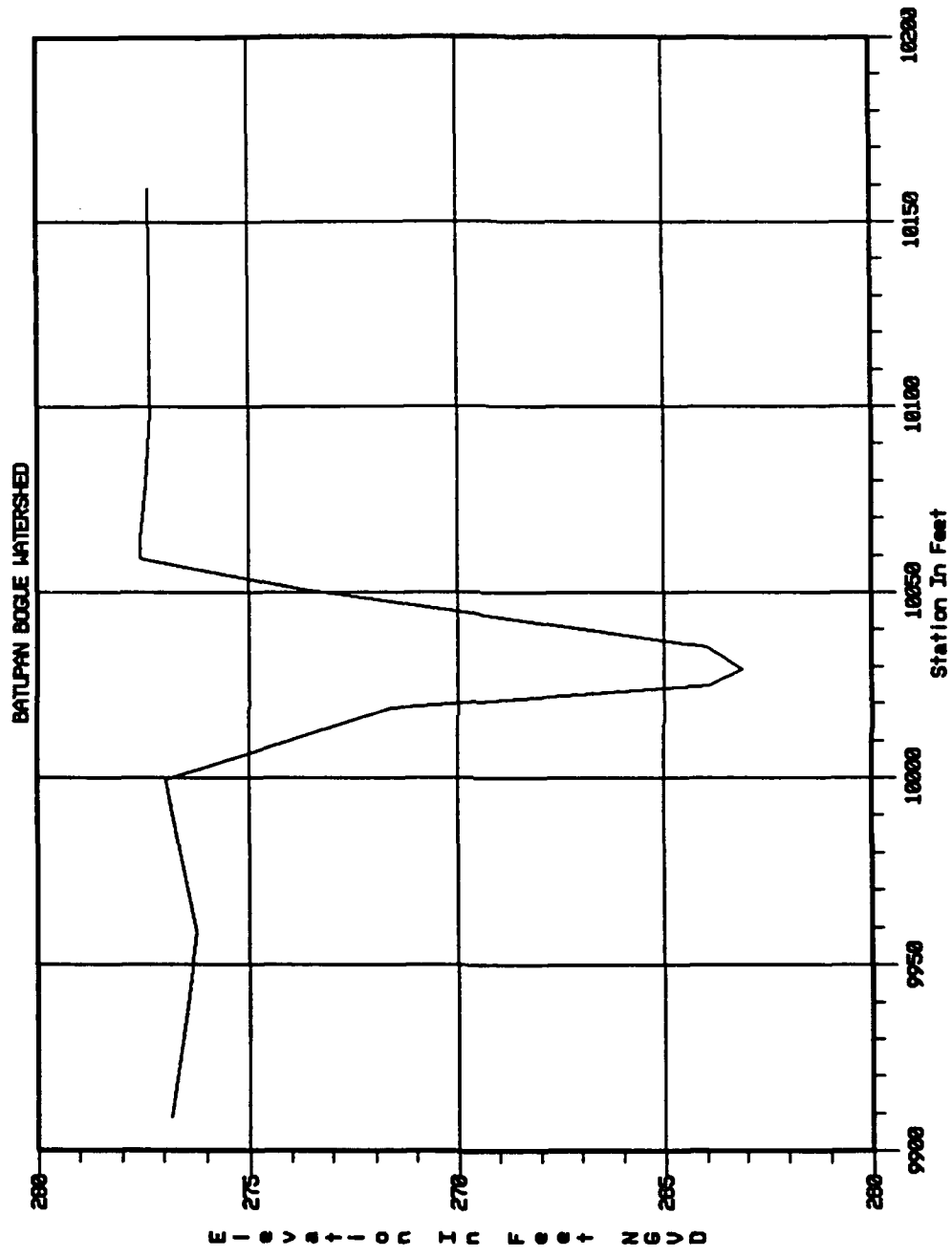


—— PERRY TRIB 1991 XSEC 2000

BATUPAN BOGLE WATERSHED

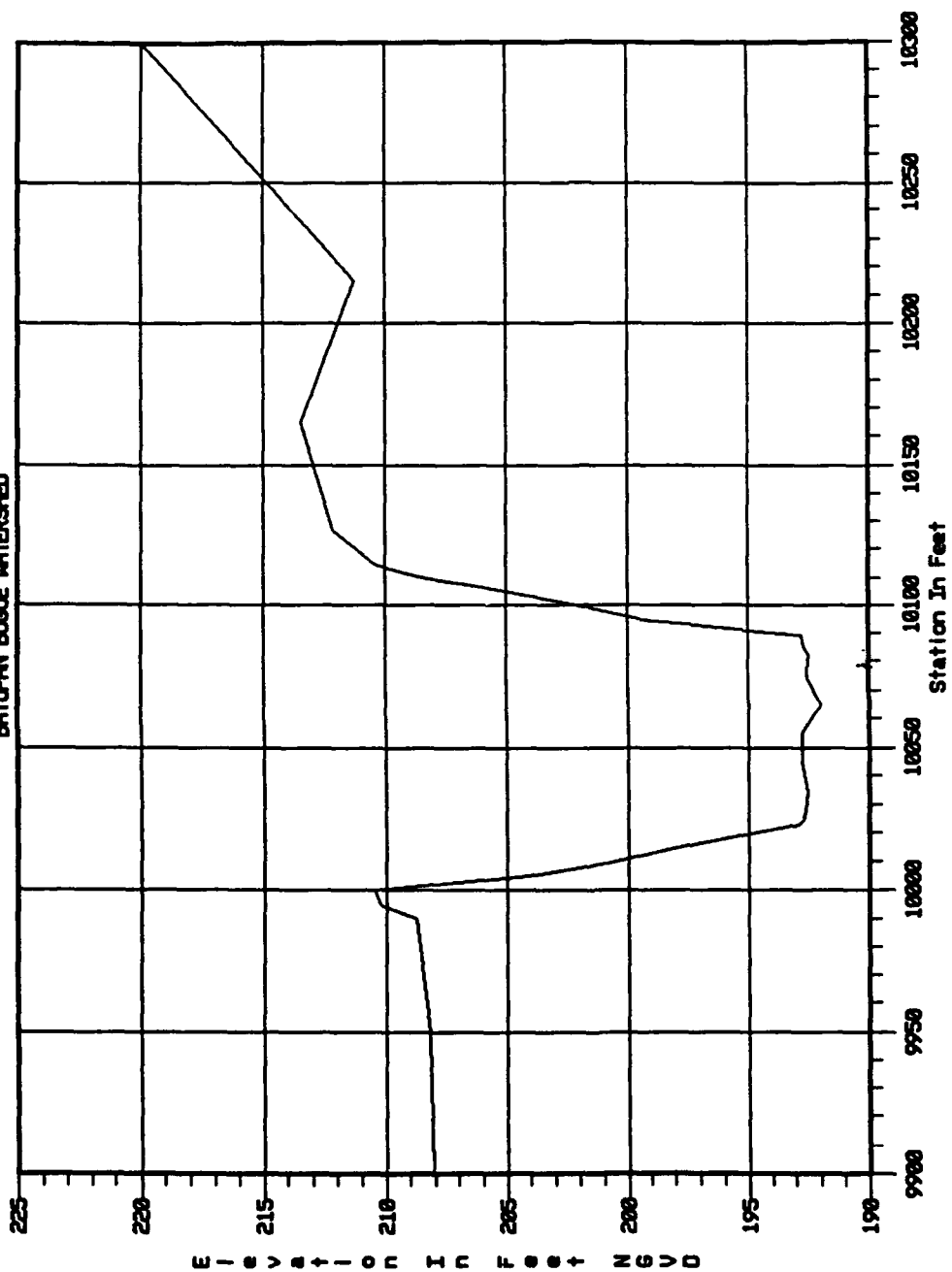


PERRY TRIB 1991 XSEC 5131

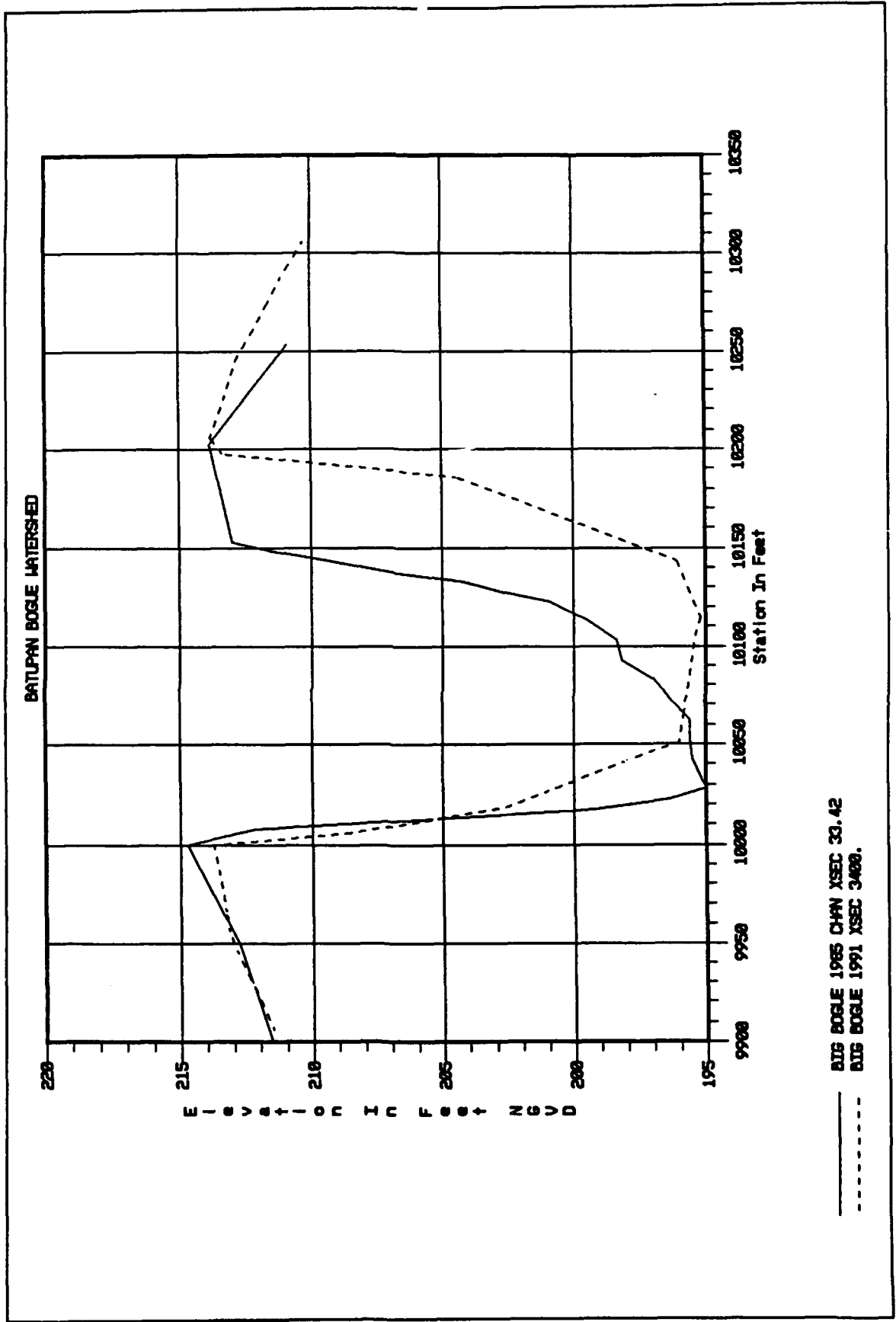


— PERRY TRIB 1991 XSEC 7500

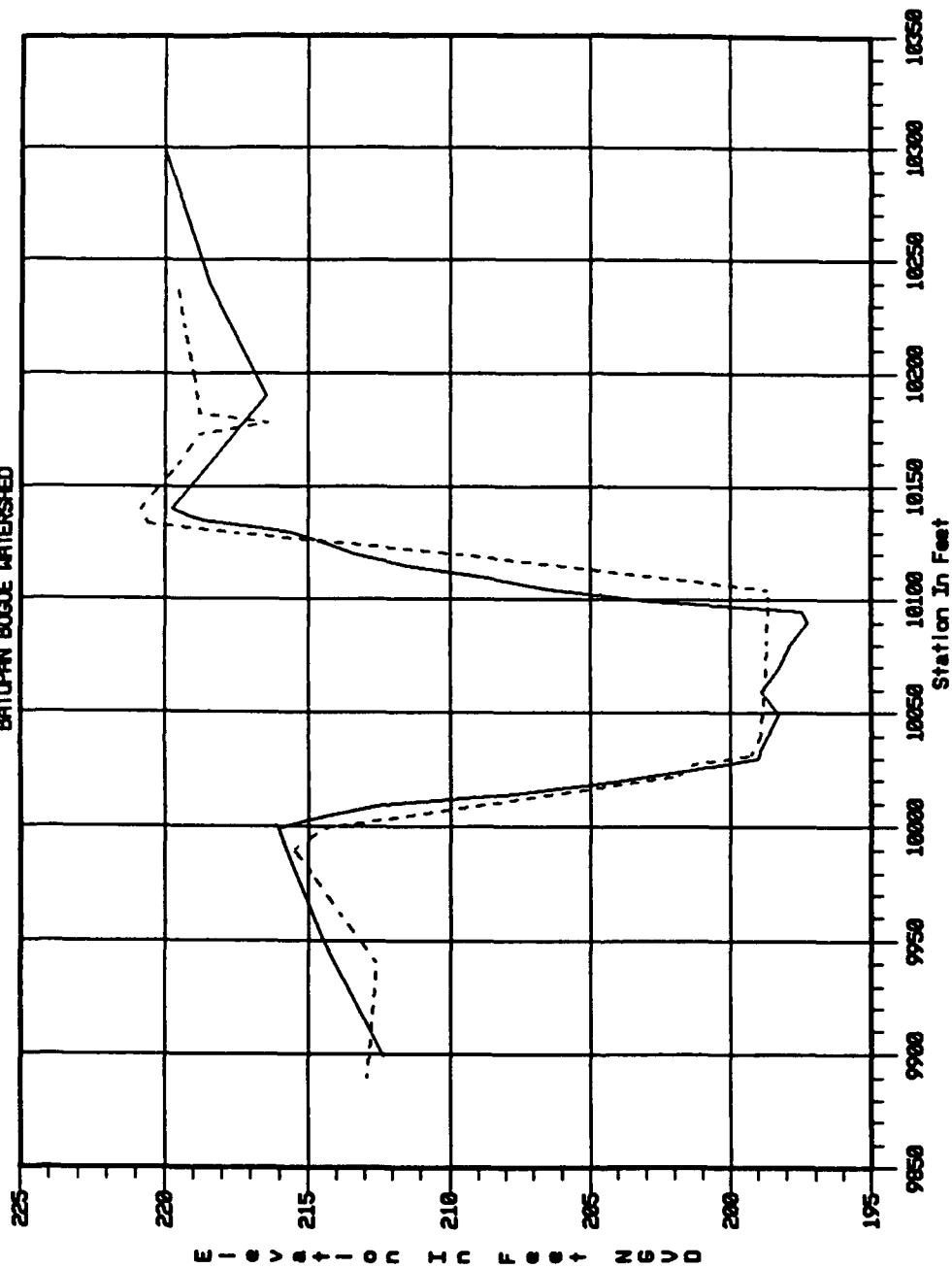
BATUPAN BOGLE WATERSHED



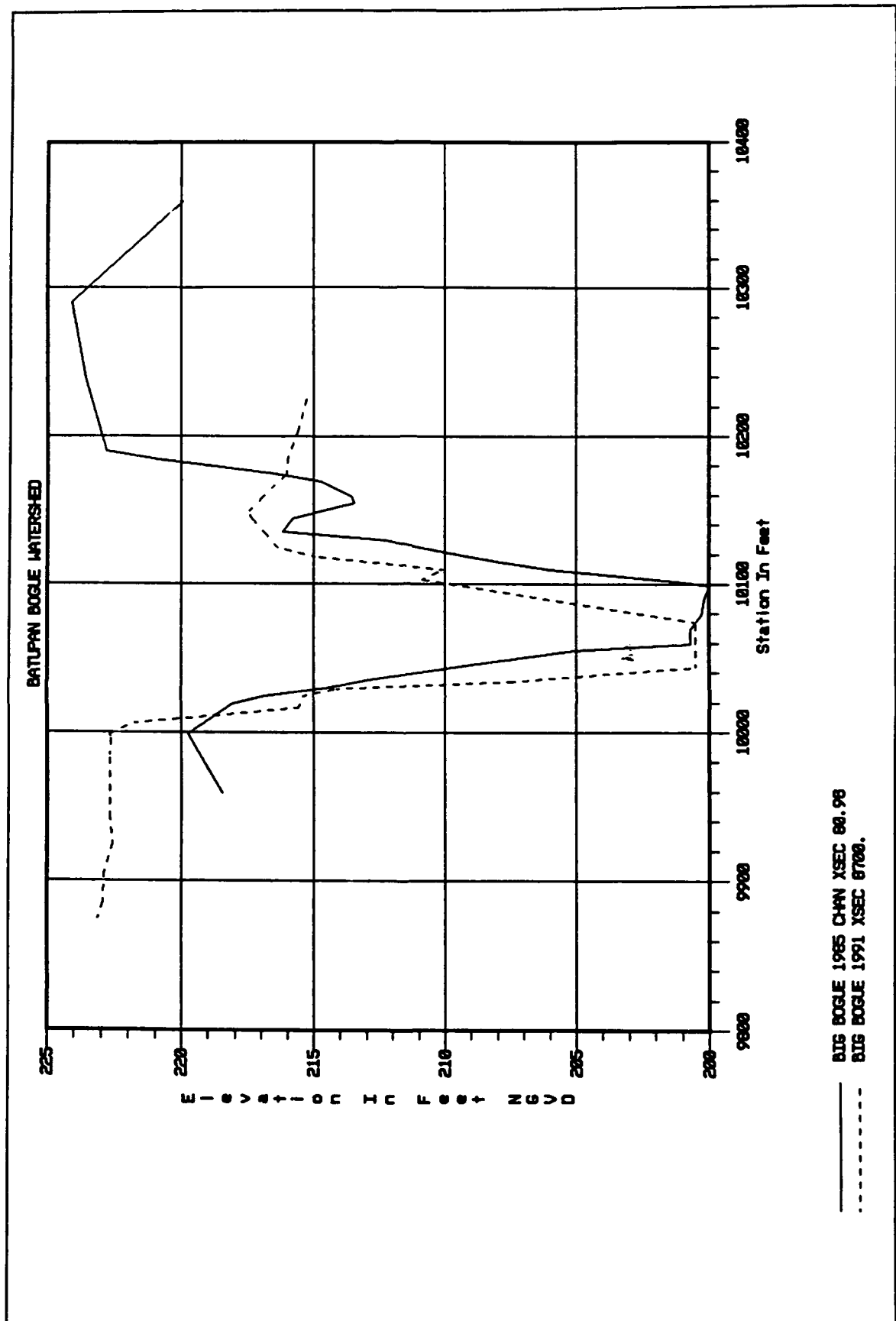
— BIG BOGLE 1965 CHAN XSEC 7.02



BATUPAN BOGLE WATERSHED



— 1985 CHAN XSEC 58.00
 - - - 1991 XSEC 8400



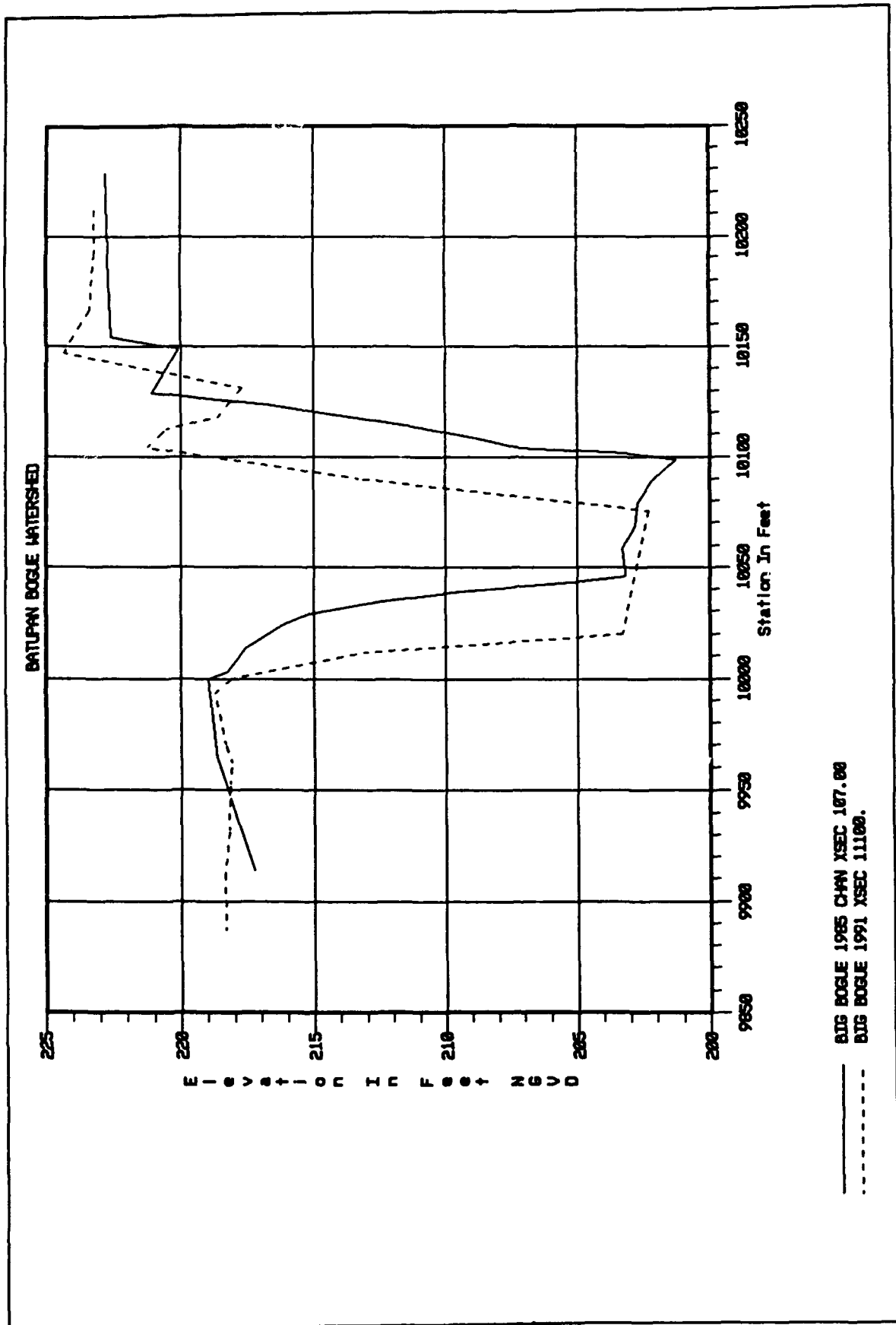
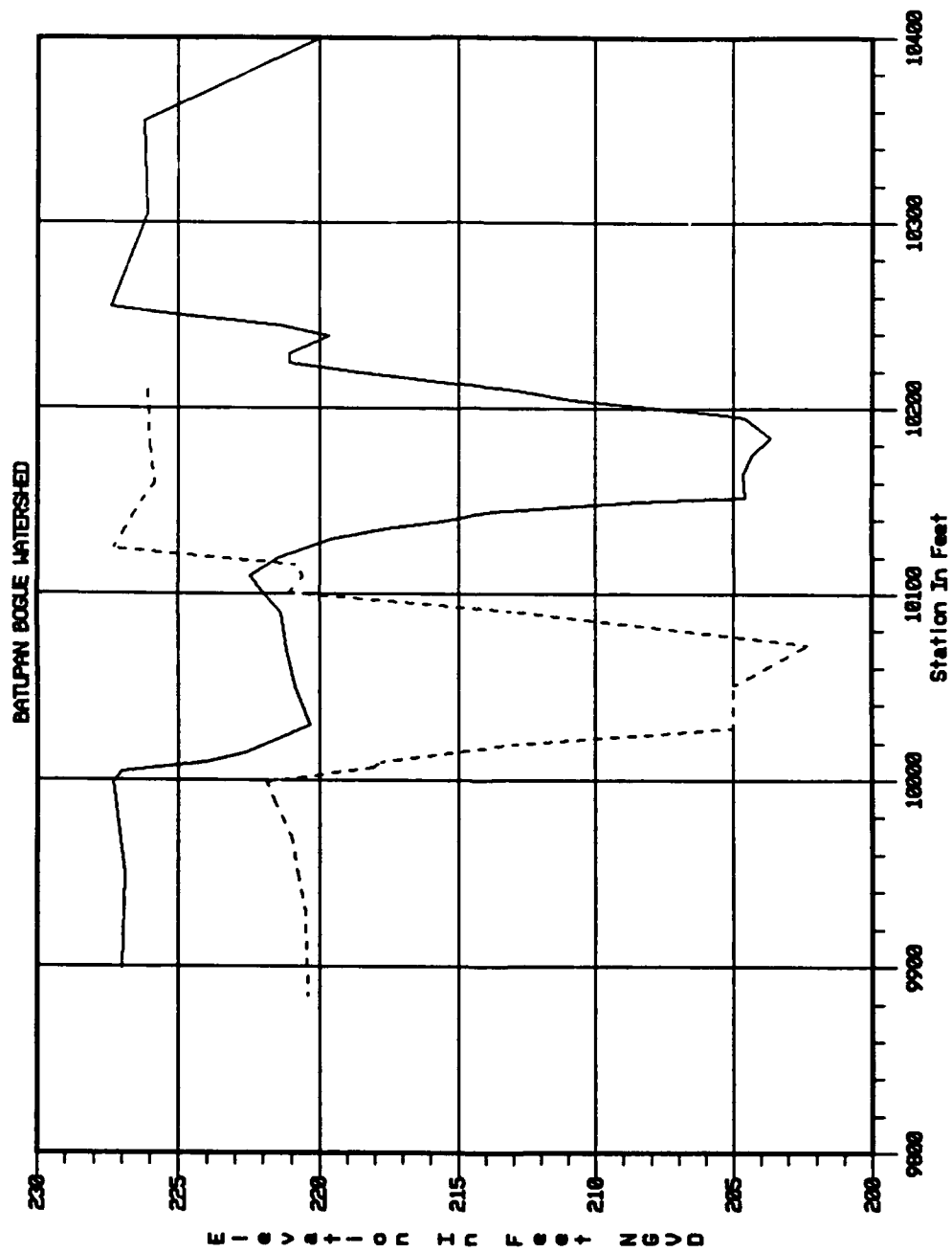
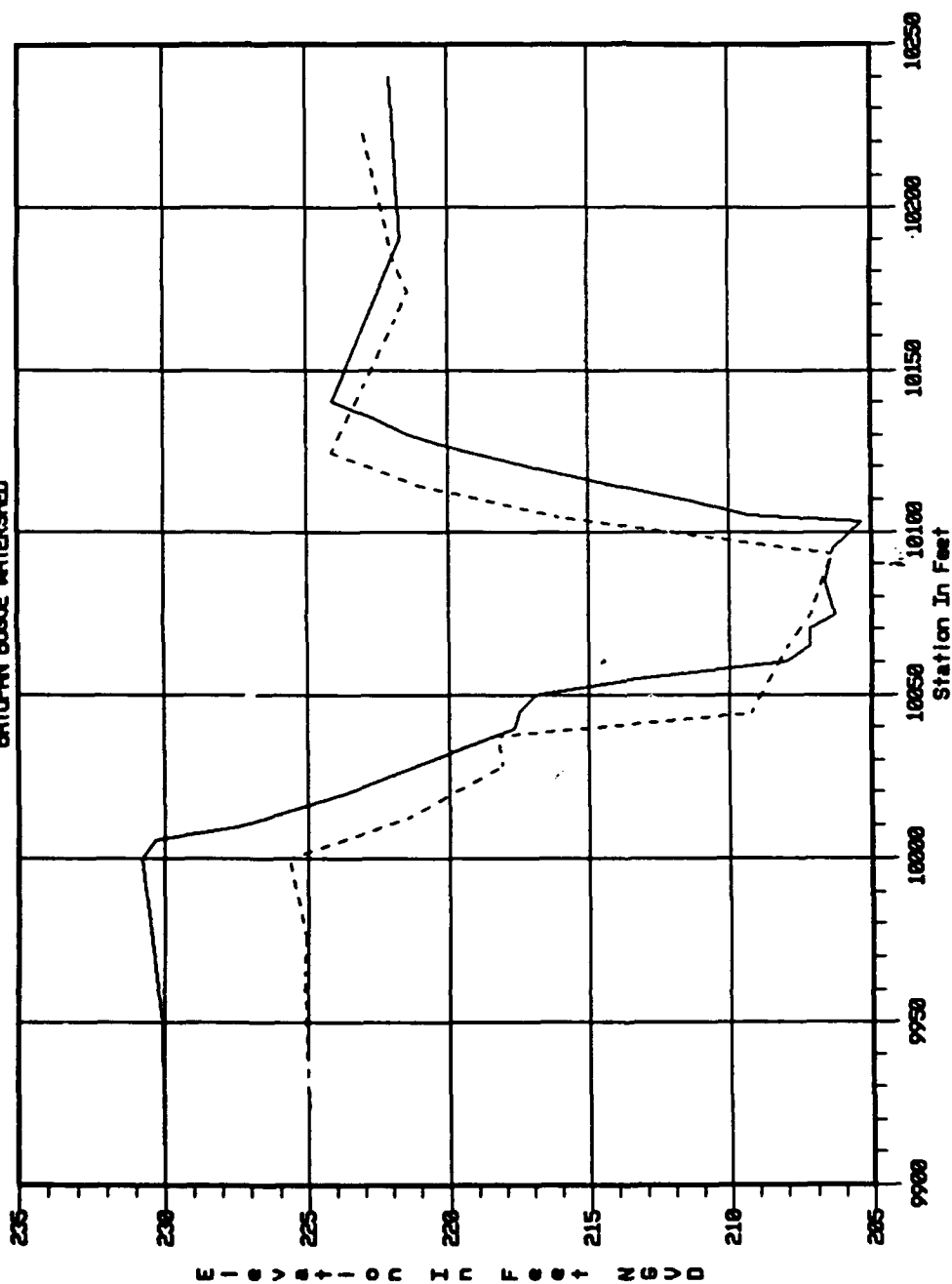


PLATE C100

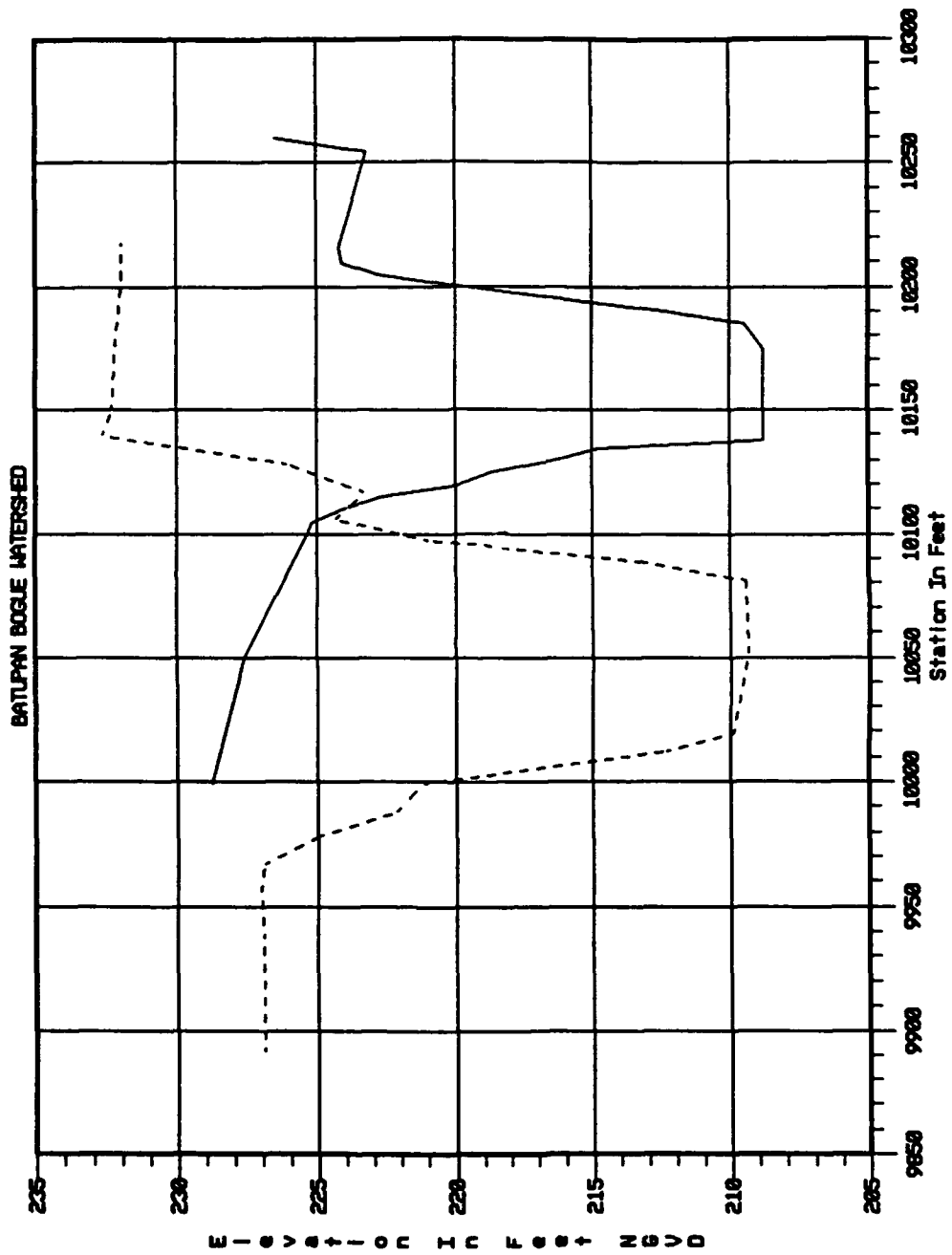


— BJS BOGLE 1965 CHAN XSEC 132.98
- - - BJS BOGLE 1991 XSEC 13700.

BATUPAN BOGLE WATERSHED

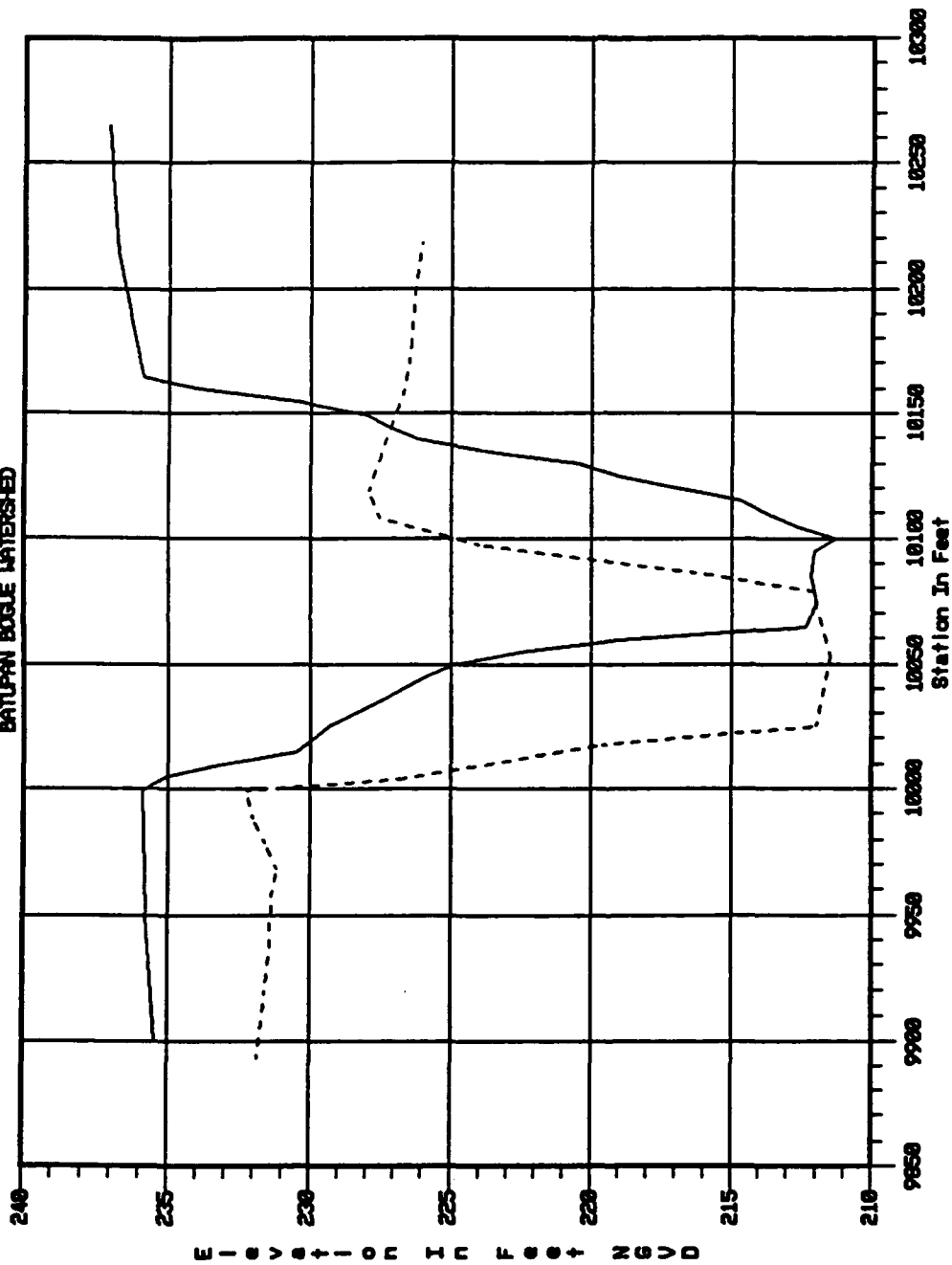


— BIG BOGLE 1985 CHAN XSEC 158.25
 - - - BIG BOGLE 1991 XSEC 18300.

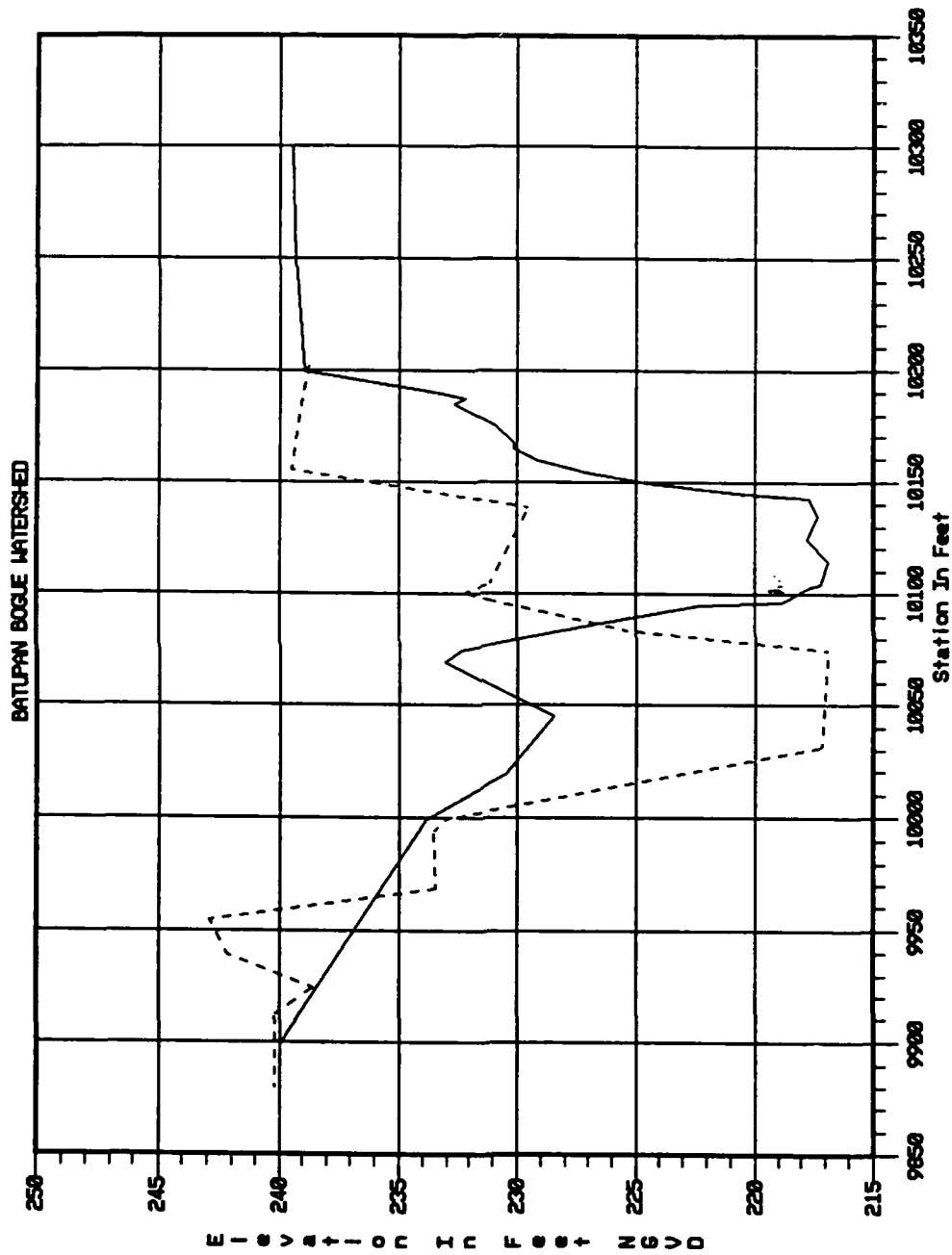


— 1985 CHAN XSEC 185.00
 - - - 1991 XSEC 19010

BATUPAN BOGLE WATERSHED



— 818 BOGLE 1985 CHAN XSEC 211.00
 - - - 818 BOGLE 1991 XSEC 21200.



— BIG BOGLE 1985 CHAN XSEC 283.50
- - - BIG BOGLE 1991 XSEC 28430.

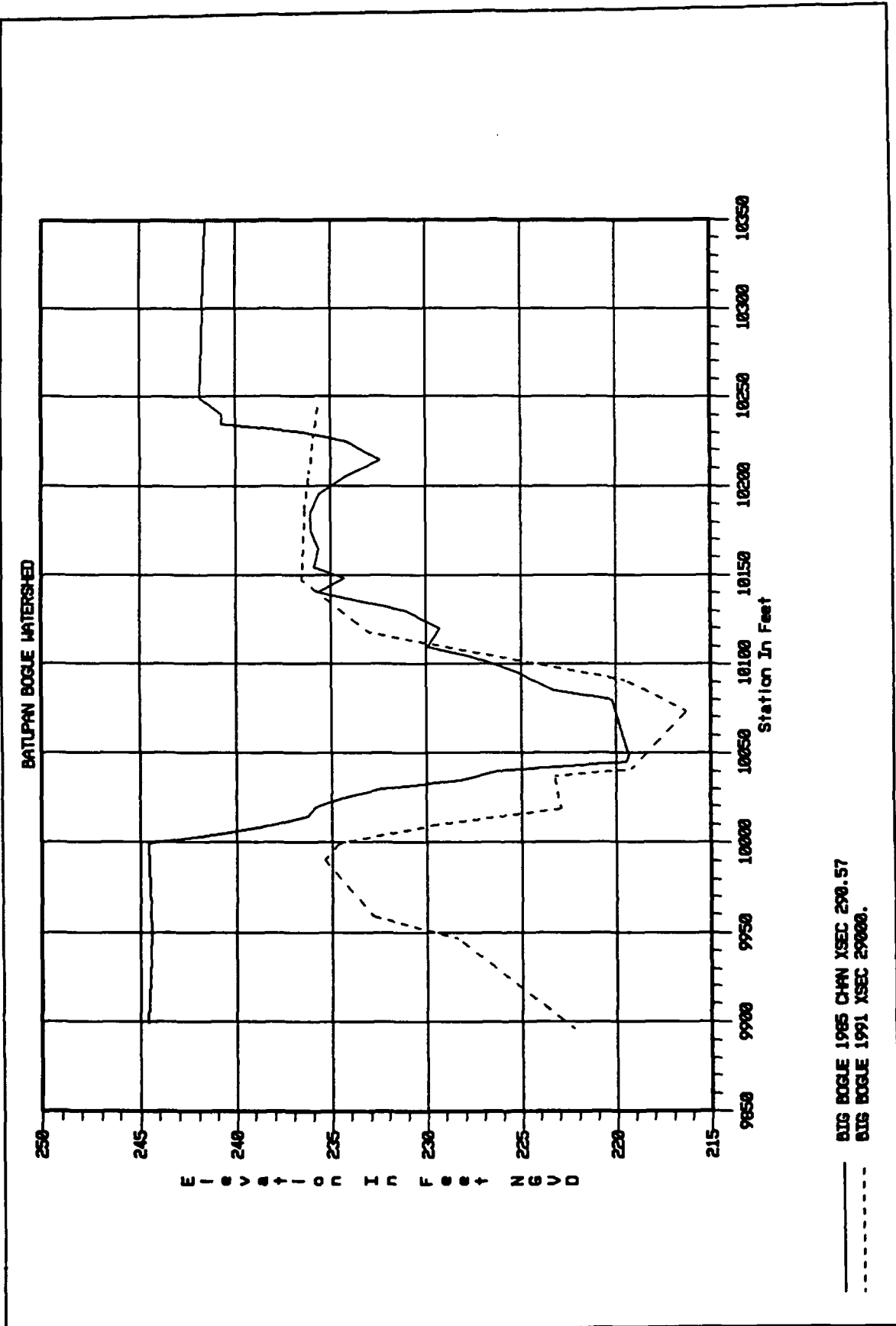
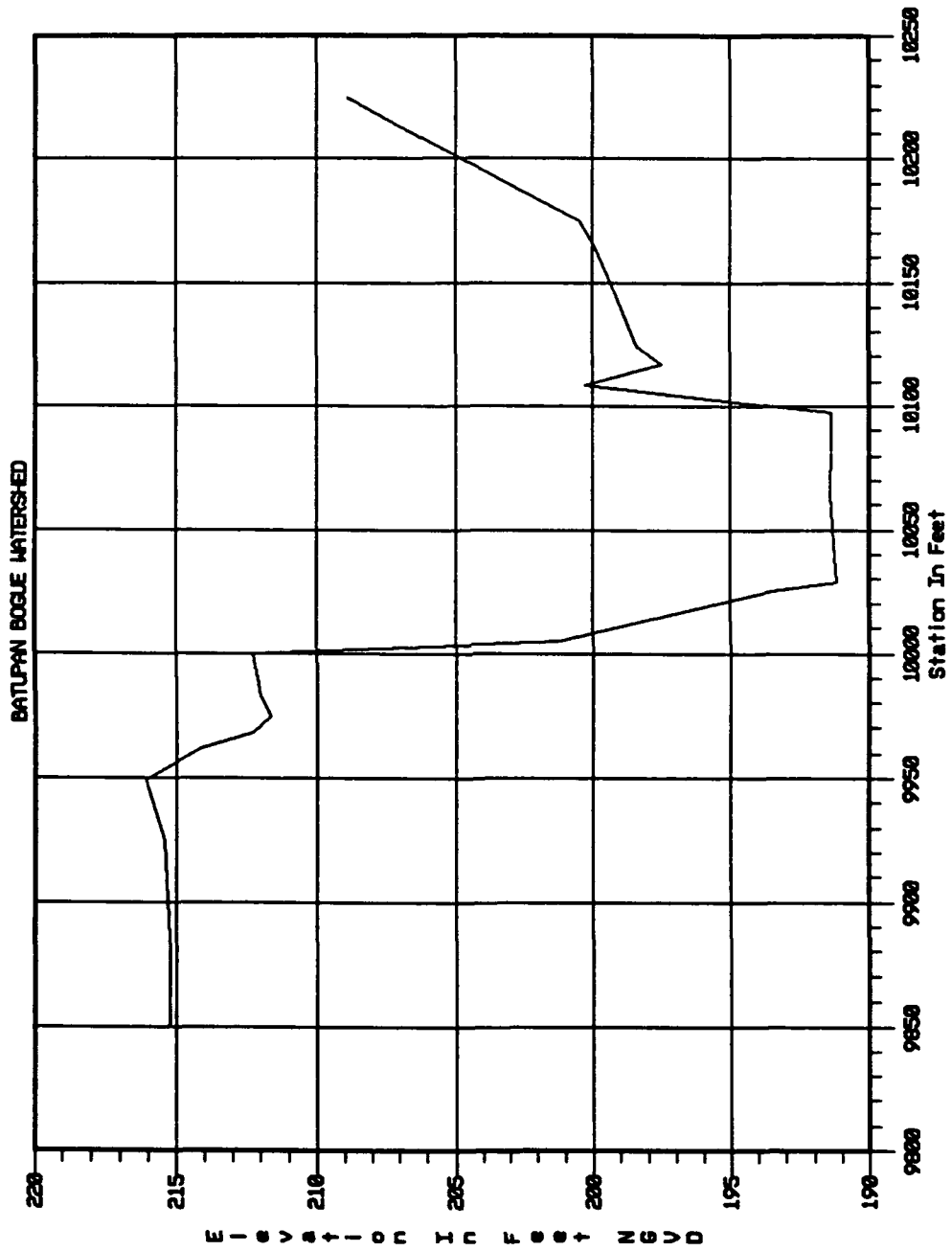
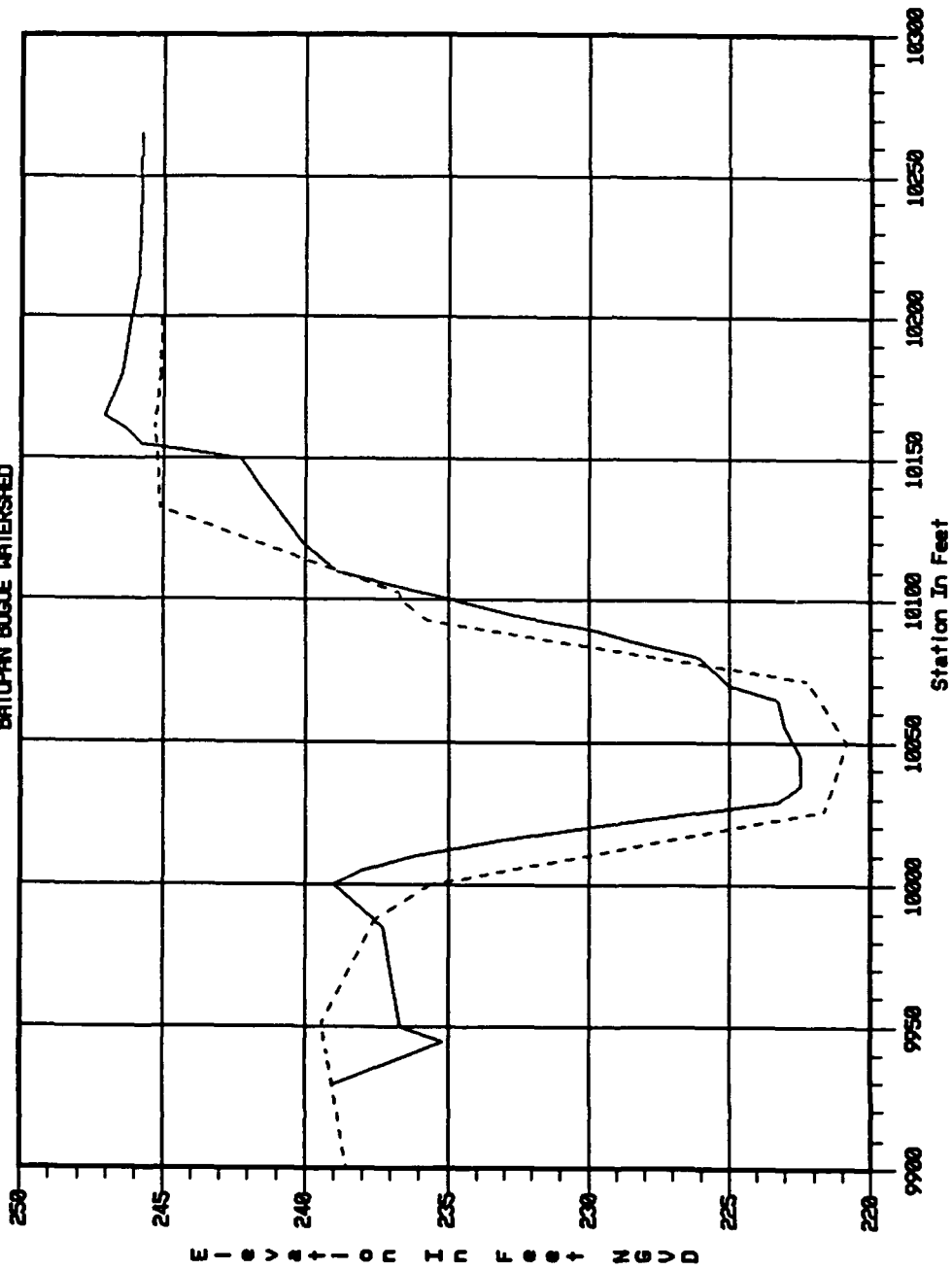


PLATE C106

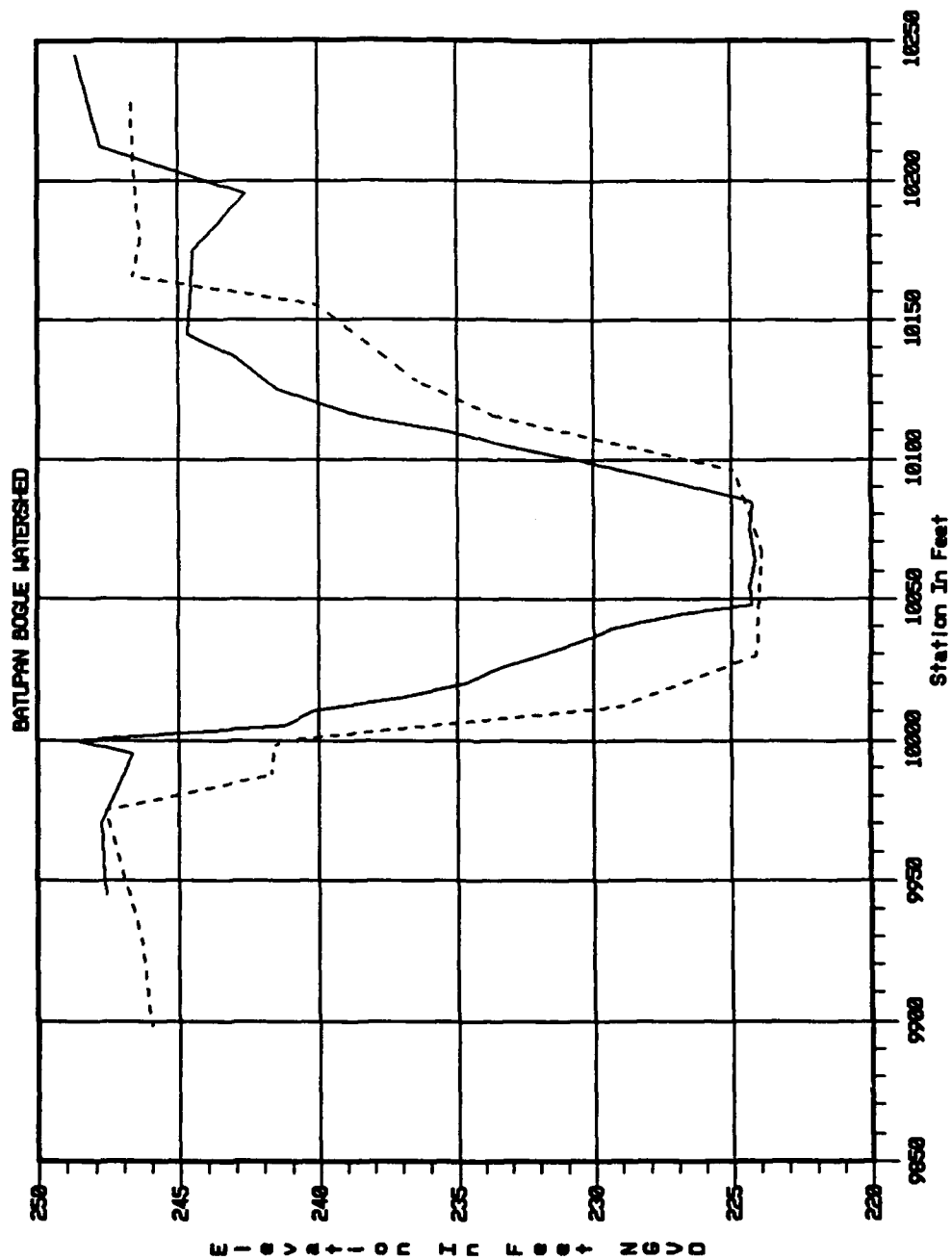


—— BGS BOGLE 1991 XSEC 310.

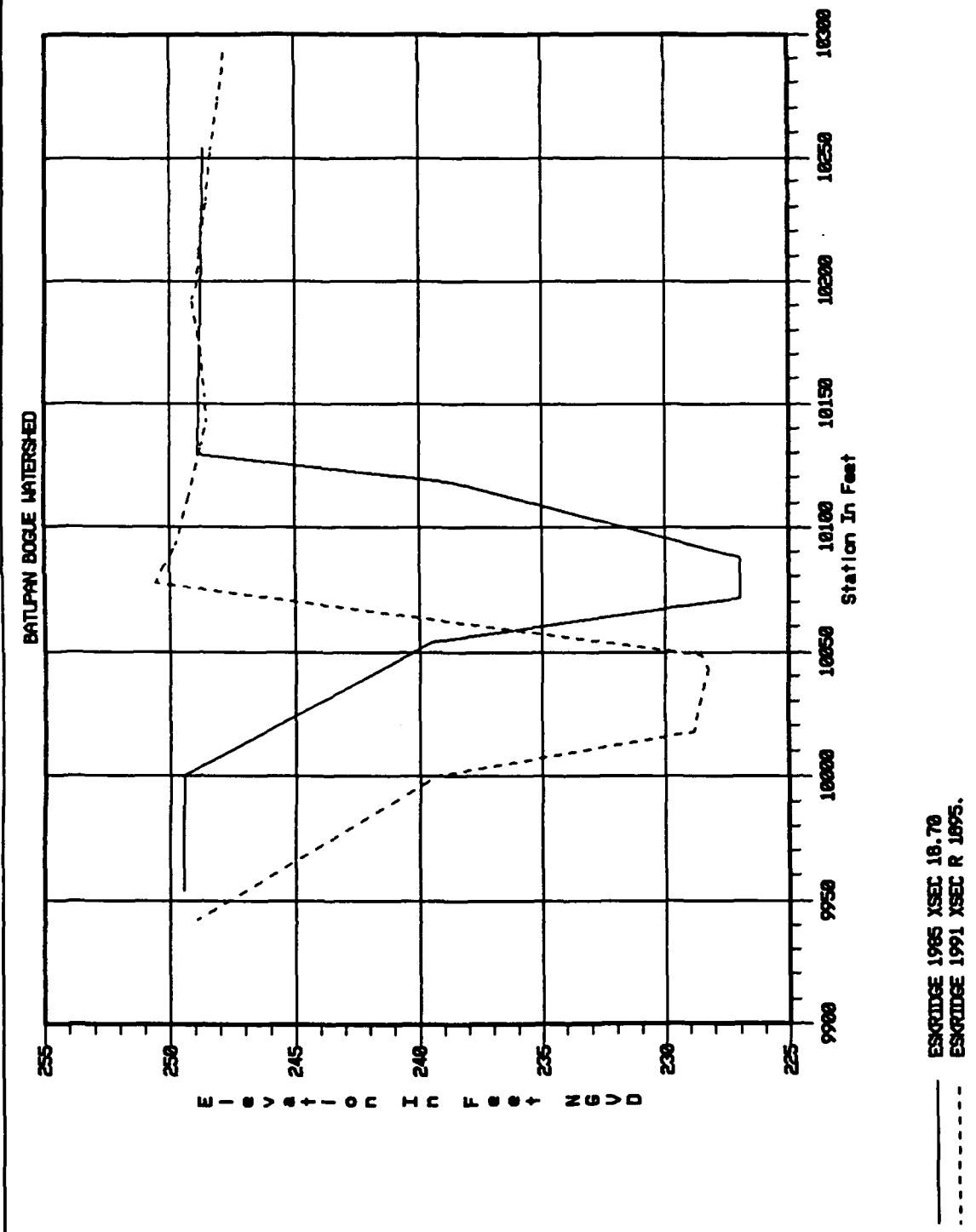
BATUPAN BOGLE WATERSHED

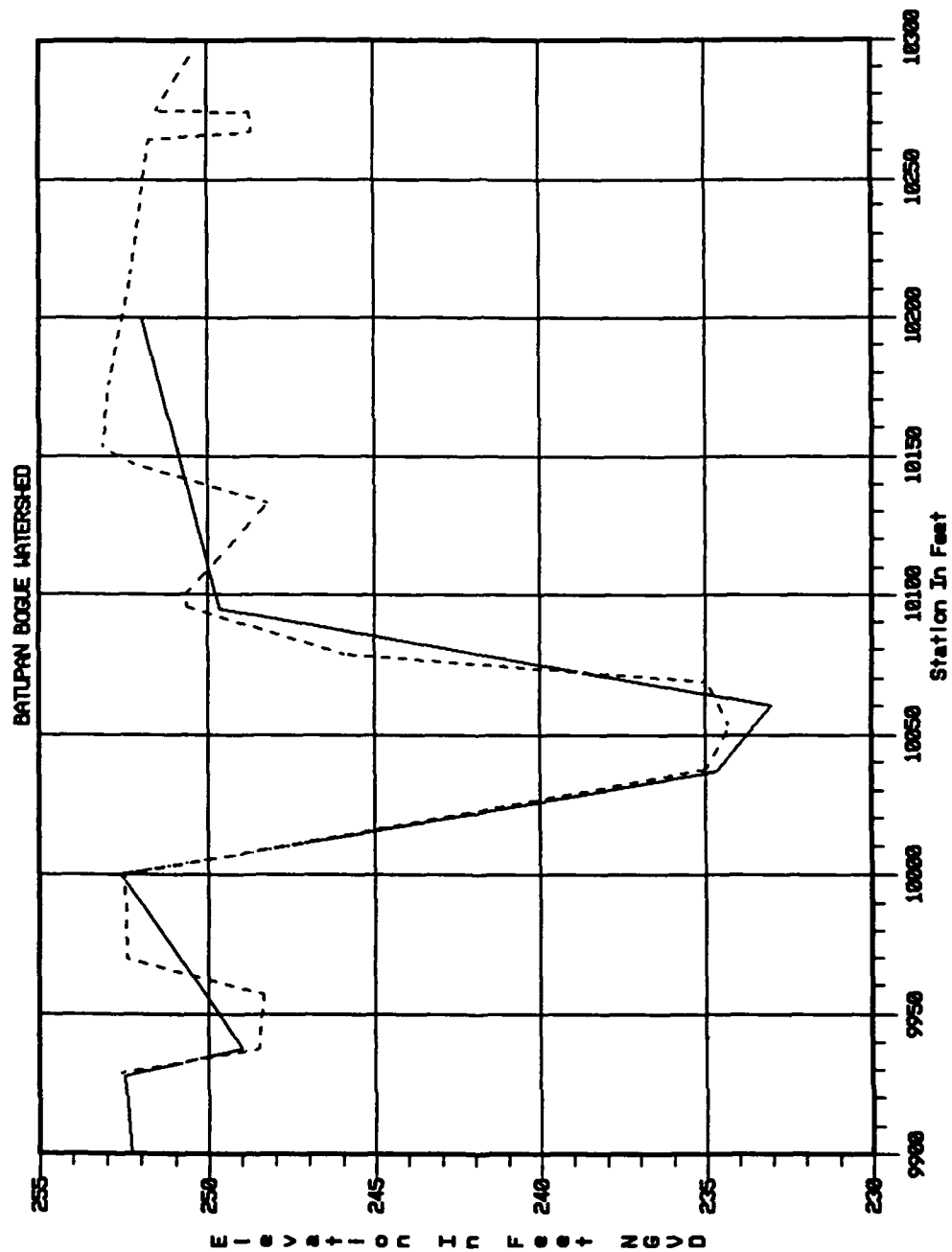


— 1985 CHAN XSEC 318.82
 - - - 1991 XSEC 315.00



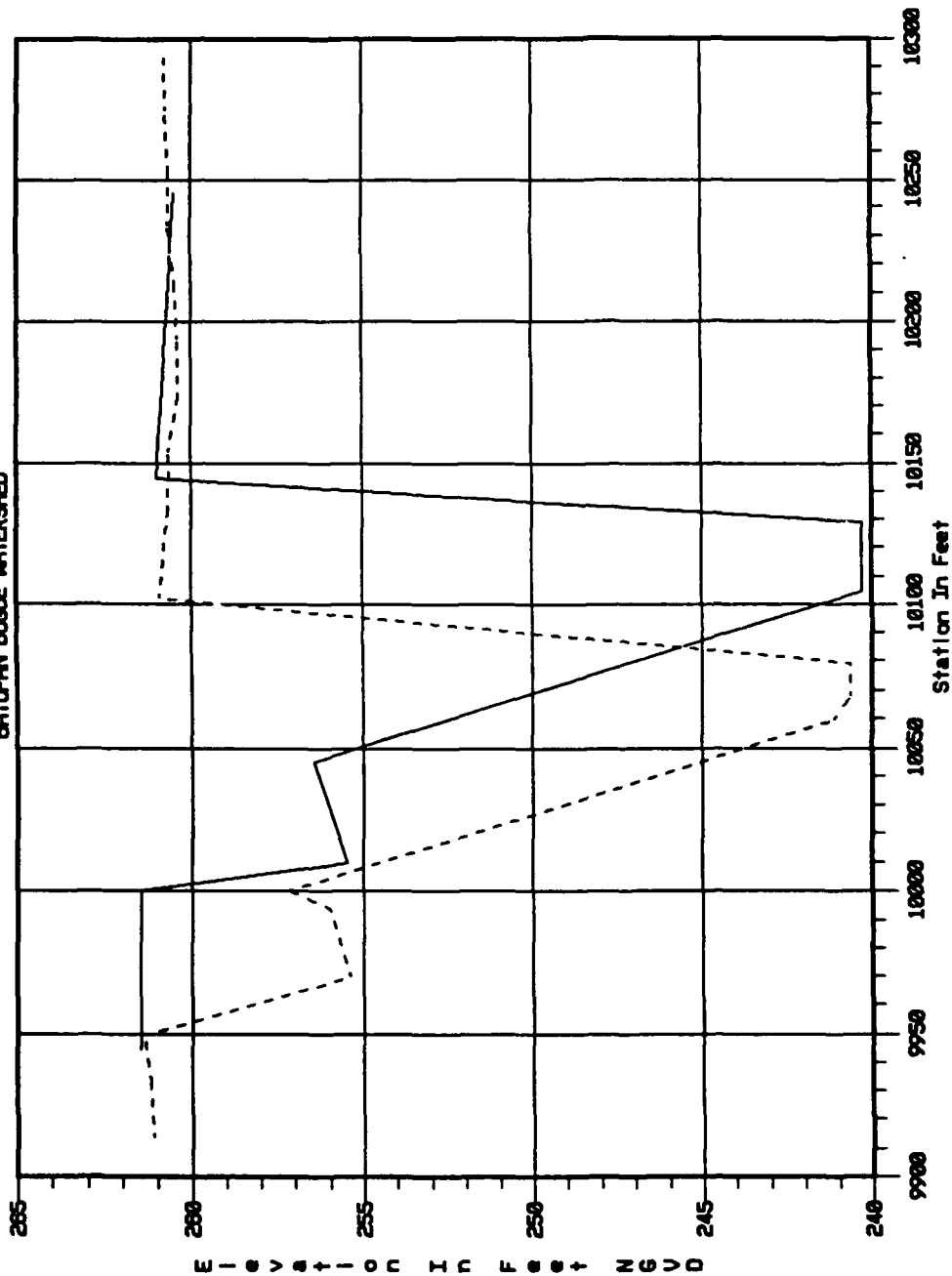
— 1965 CHAN XSEC 332.54
 - - - 1991 XSEC 33800



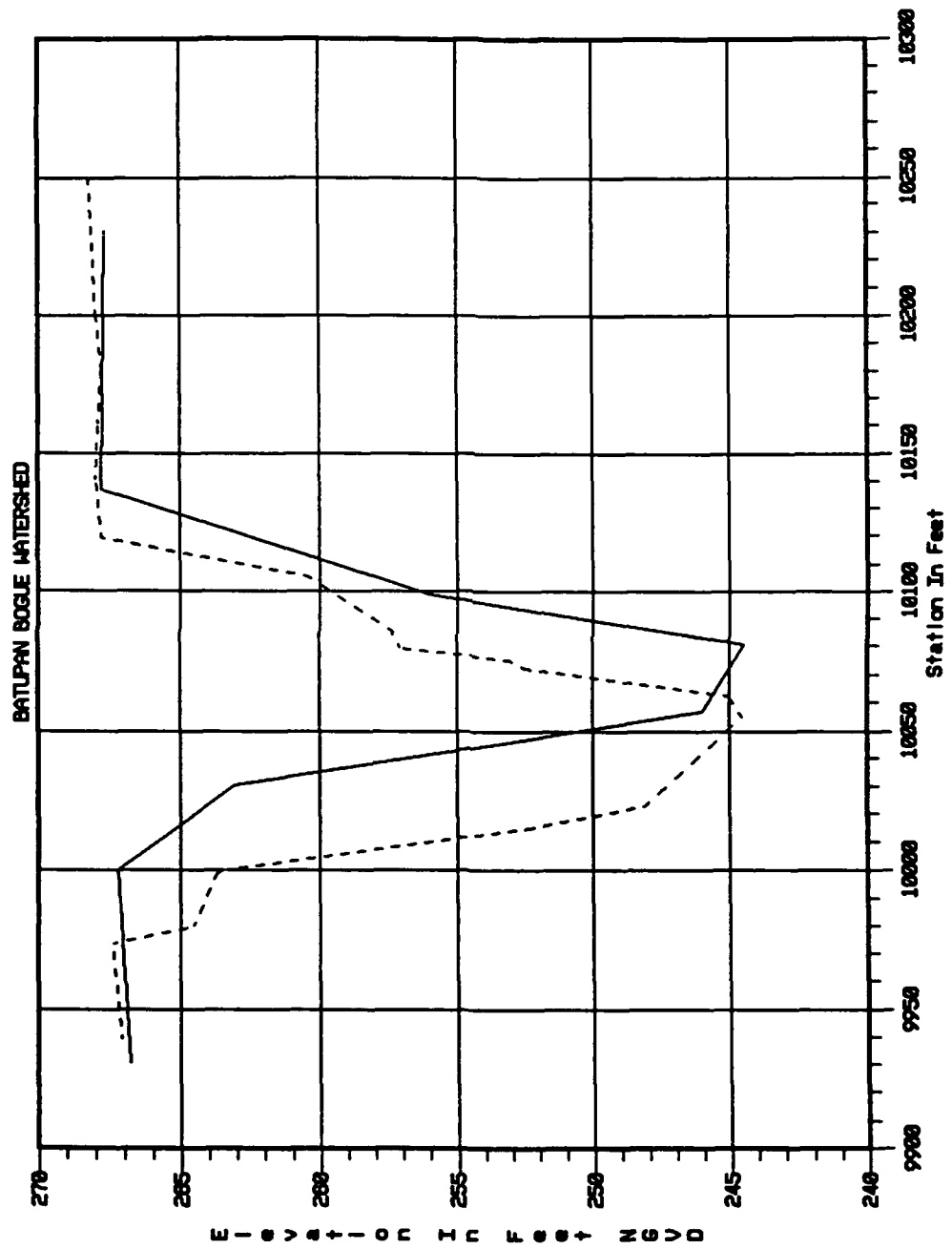


ESCRIDGE 1985 XSEC 50.00
 ESCRIDGE 1991 XSEC R 5229.

BATUPAN BOGLE WATERSHED

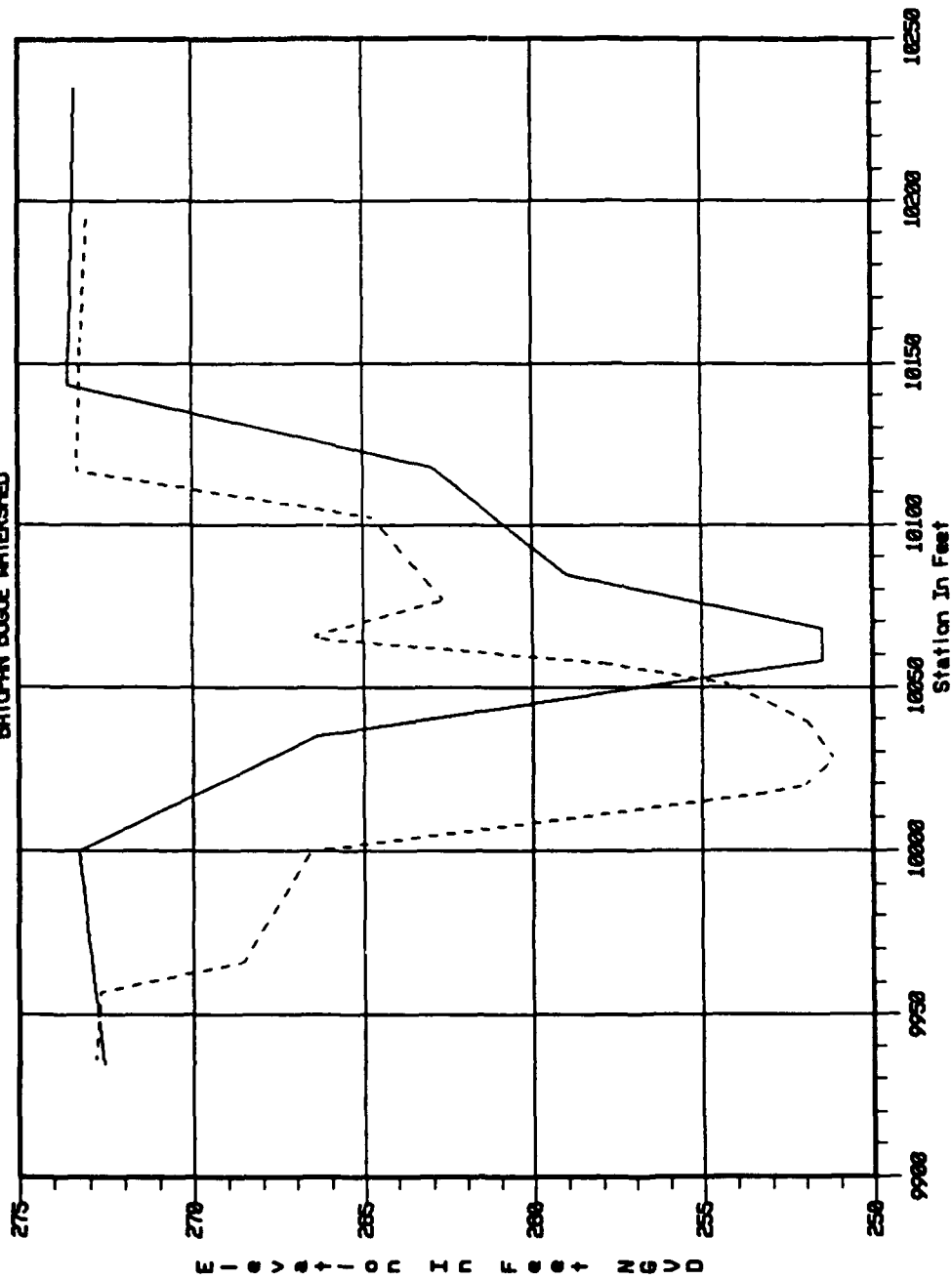


ESKRIDGE 1985 XSEC 98.00
 ESKRIDGE 1991 XSEC R 9979

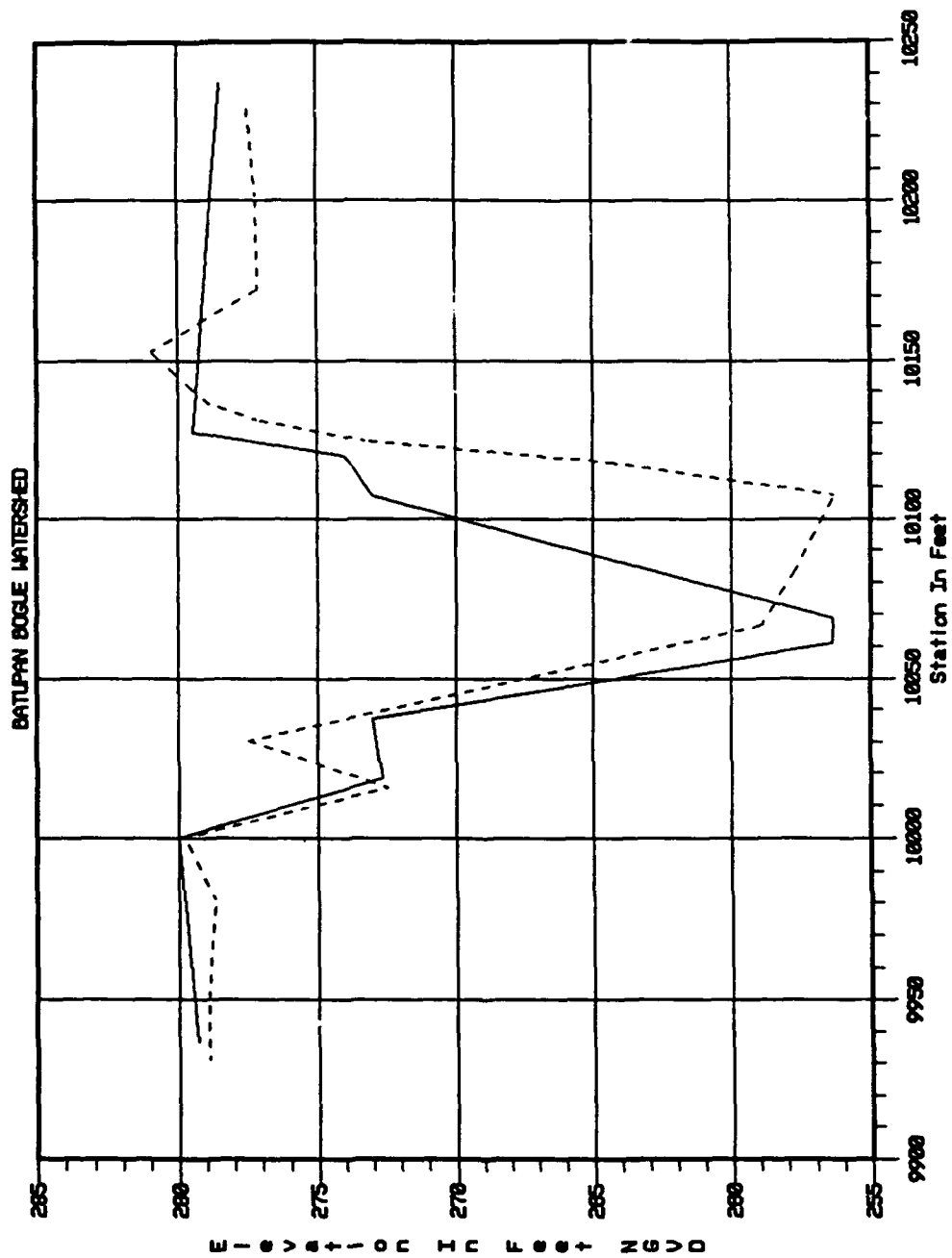


——— ESKRIDGE 1965 XSEC 129.20
 - - - - - ESKRIDGE 1991 XSEC R 13082.

BATUPAN BOGLE WATERSHED

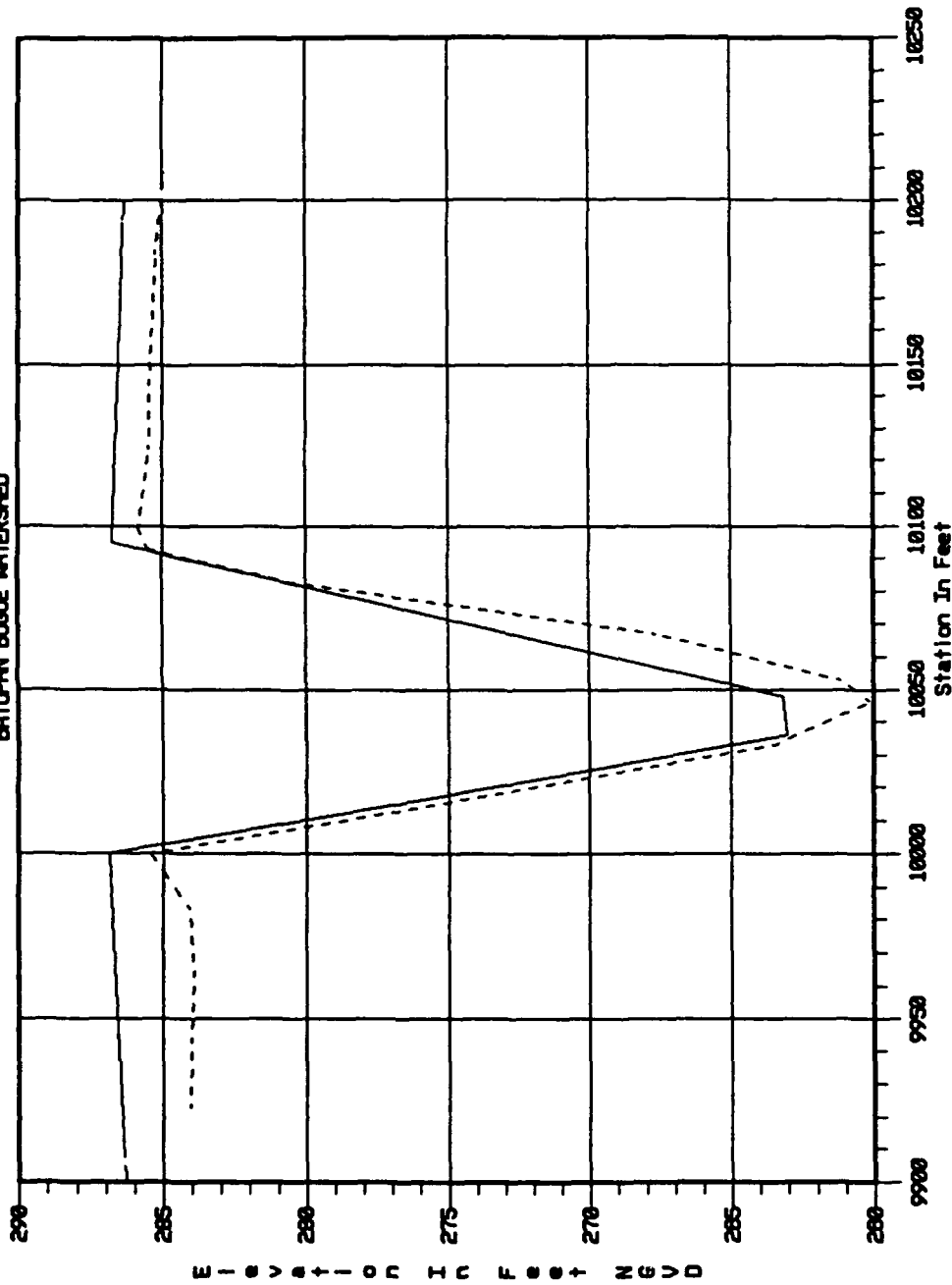


ESKRIDGE 1985 XSEC 167.00
 ESKRIDGE 1991 XSEC R 17246.

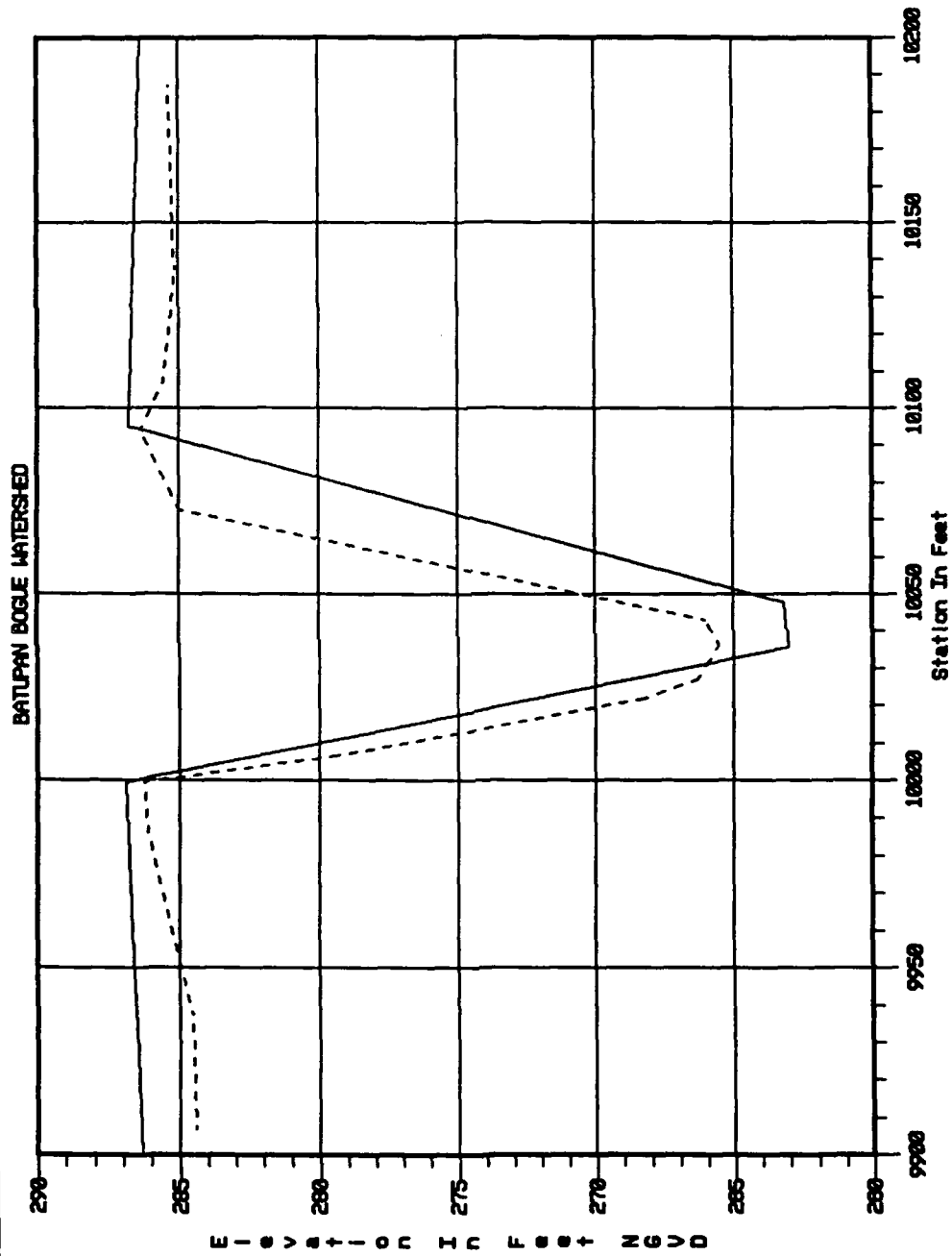


ESKRIDGE 1985 XSEC 194.30
ESKRIDGE 1991 XSEC R 19886.

BATUPAN BOGLE WATERSHED

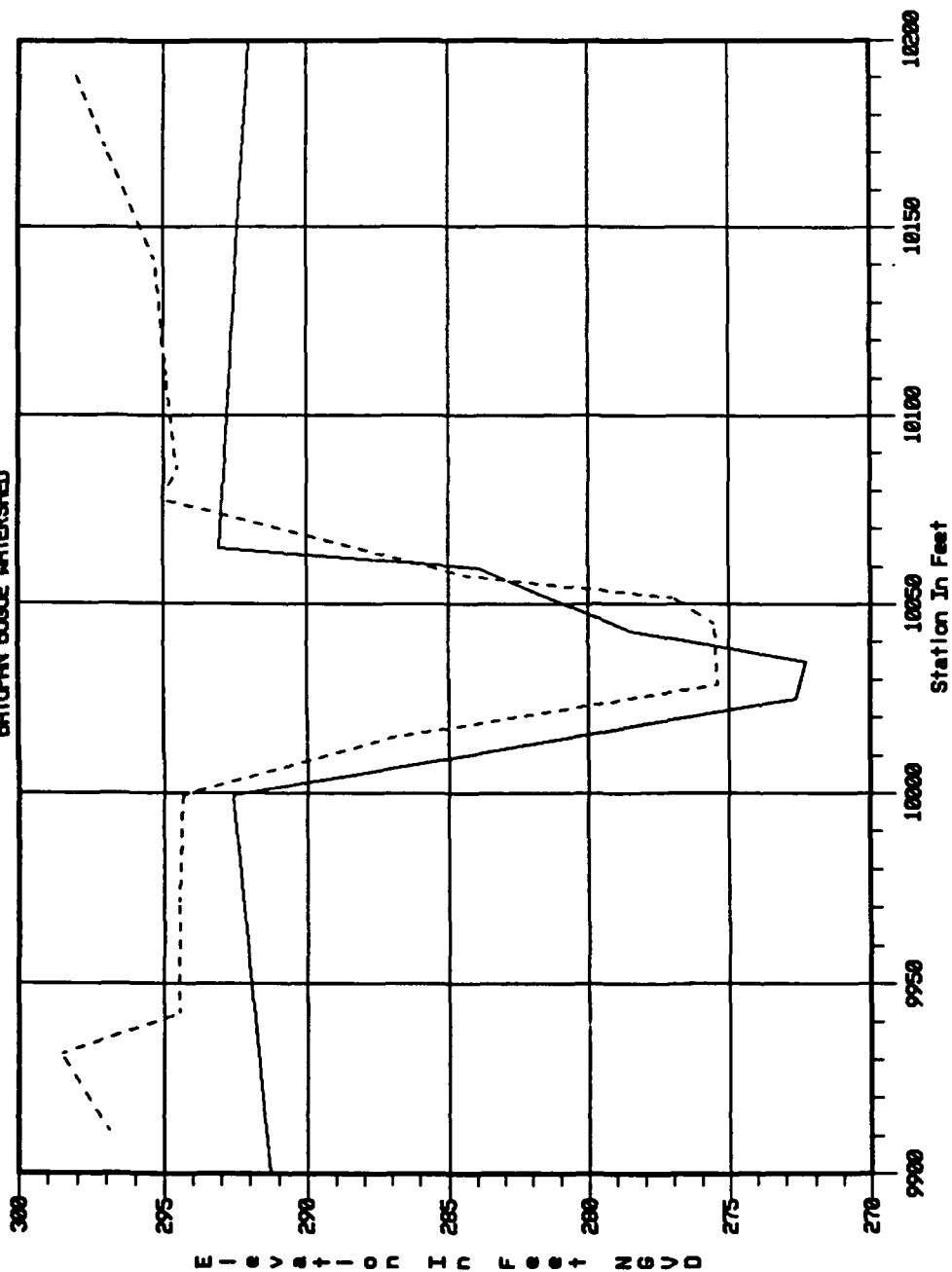


——— ESKRIDGE 1985 XSEC 228.00
 - - - - - ESKRIDGE 1991 XSEC R 22945.

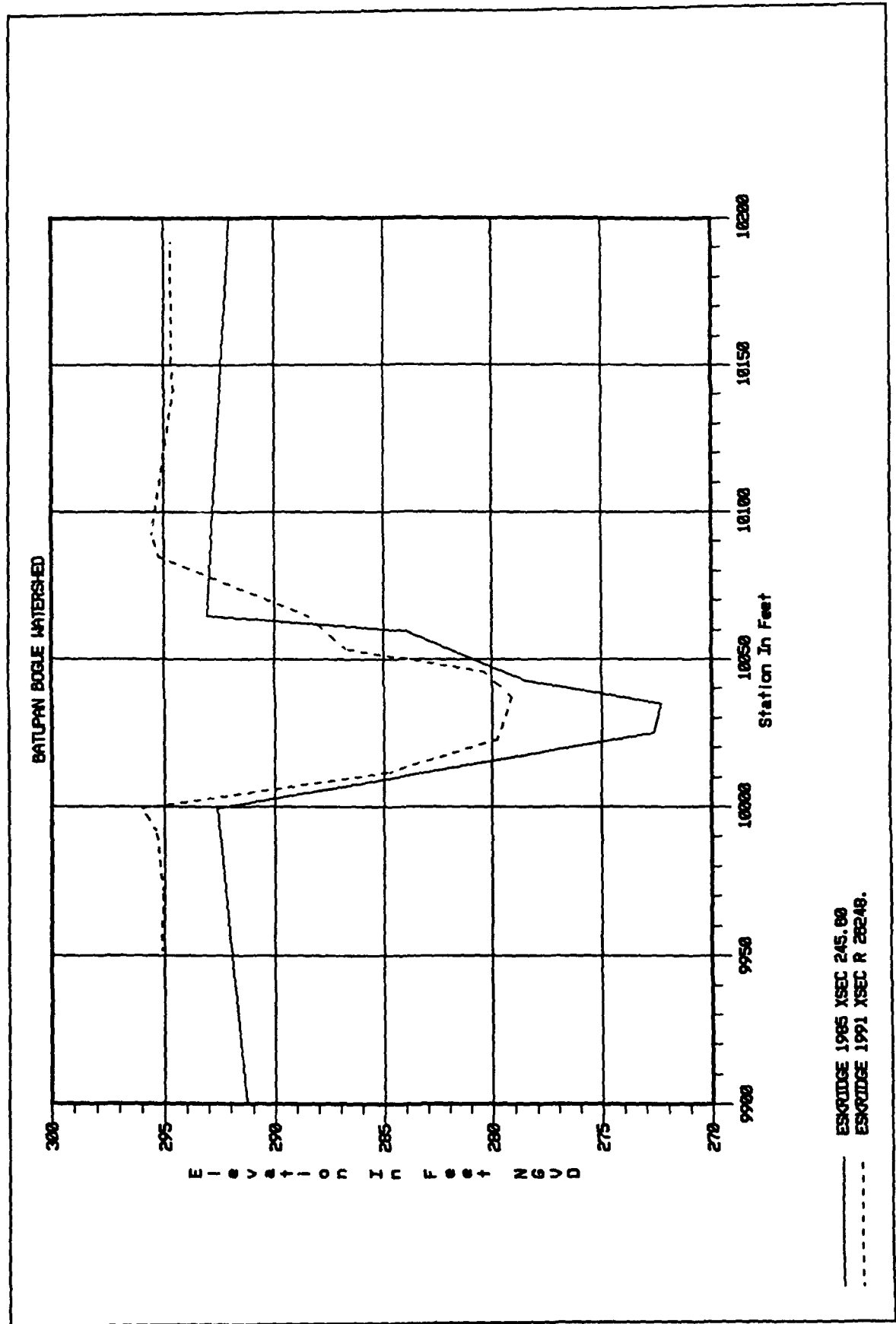


ESKIDGE 1985 XSEC 220.00
ESKIDGE 1991 XSEC R 22325.

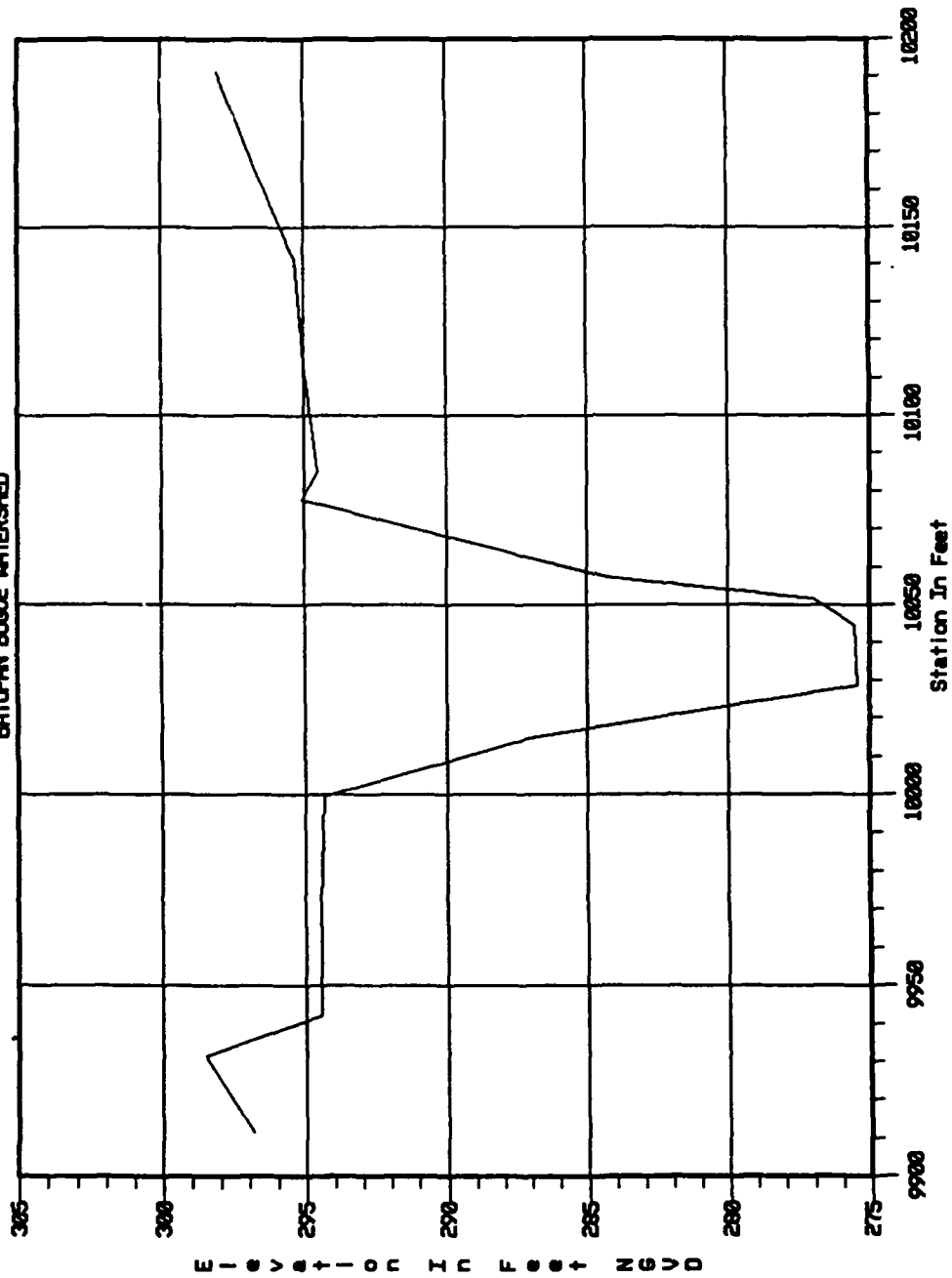
BATUPAN BOGLE WATERSHED



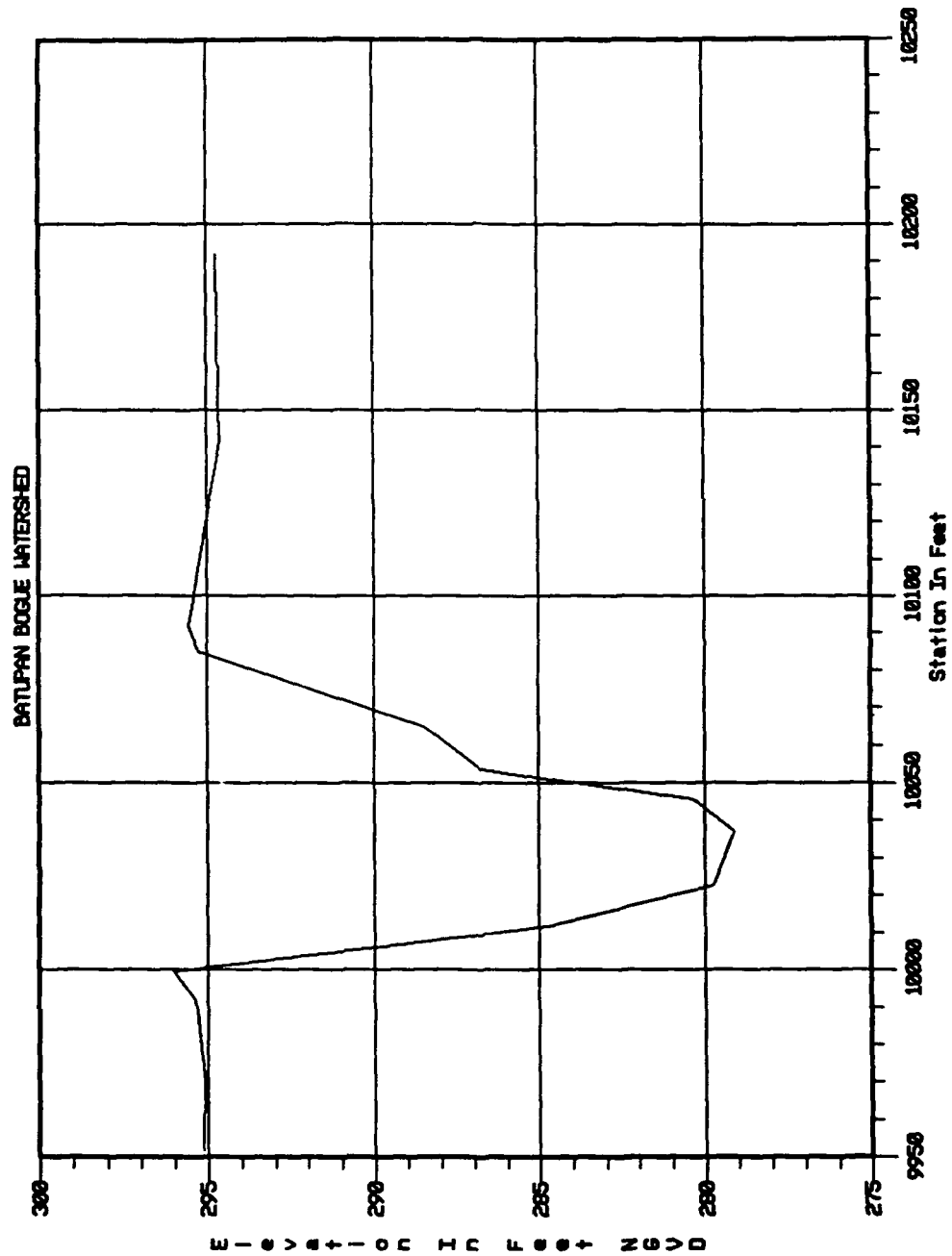
ESKRIDGE 1985 XSEC 245.80
 ESKRIDGE 1991 XSEC R 25934.



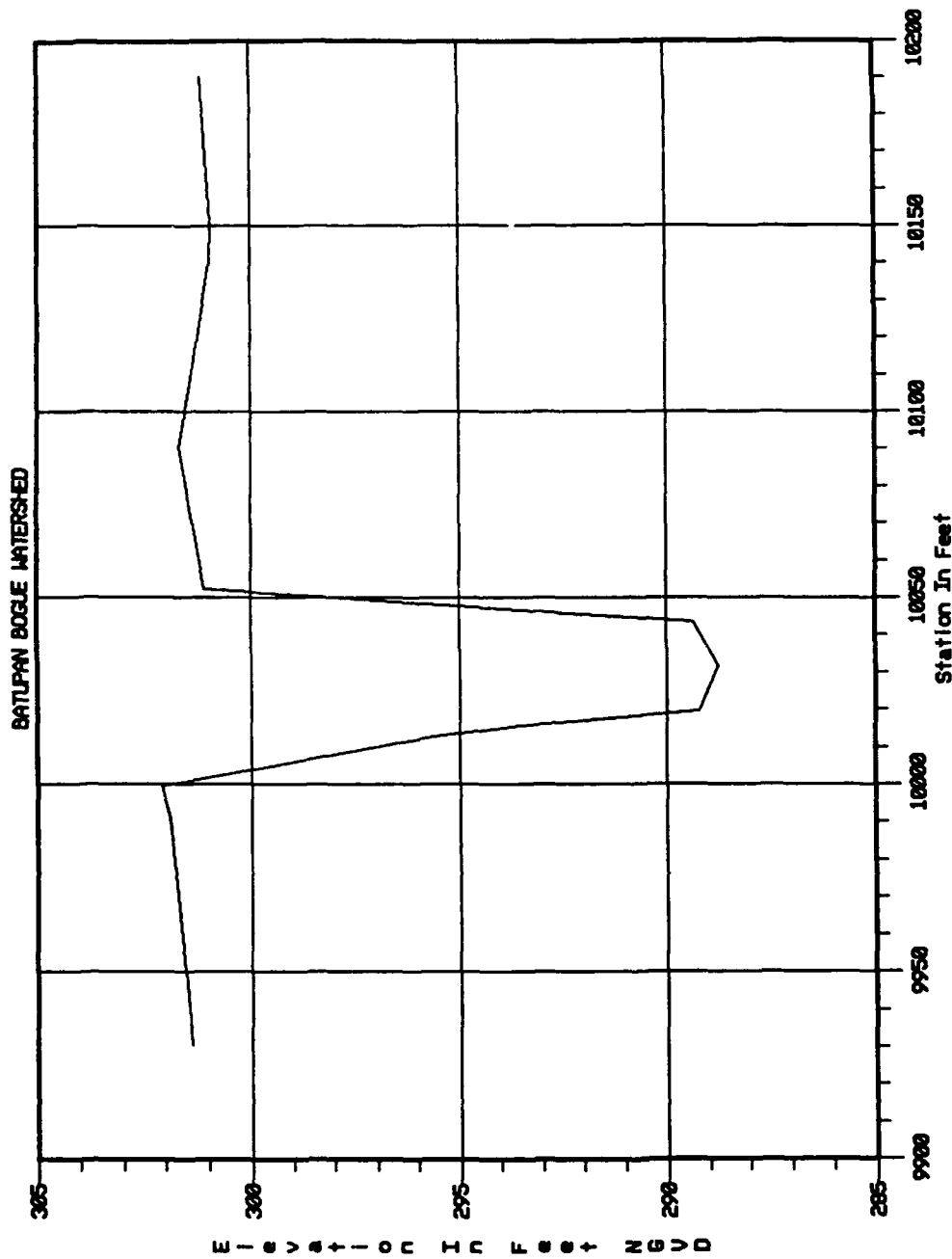
BATUPAN BOGE WATERSHED



ESCRIDGE 1991 XSEC R 25934.

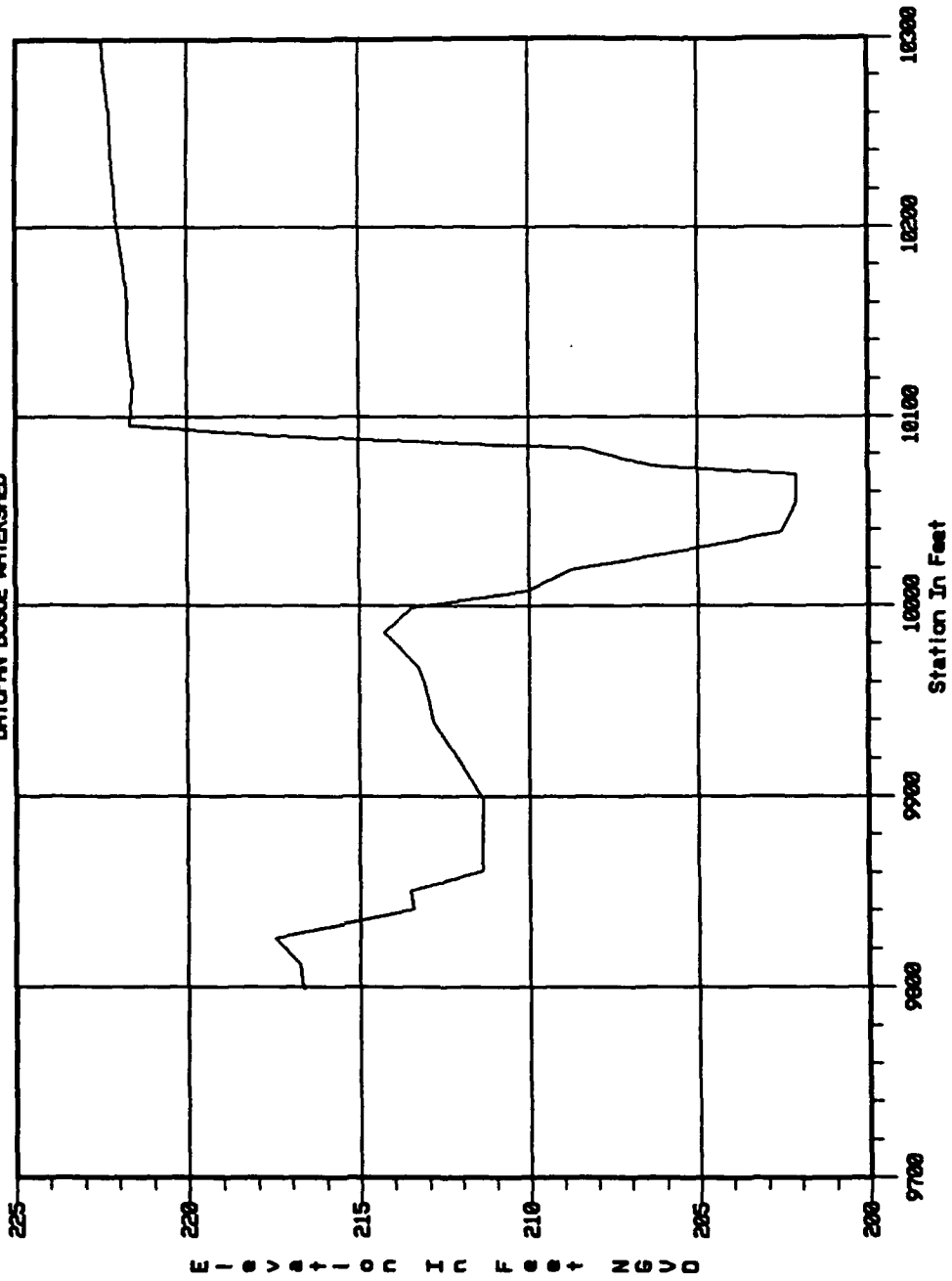


ESKIDGE 1991 XSEC R 28248.



ESKRIDGE 1991 XSEC R 26924.

BATUPAN BOGLE WATERSHED



SYNCS 1991 XSEC 592.

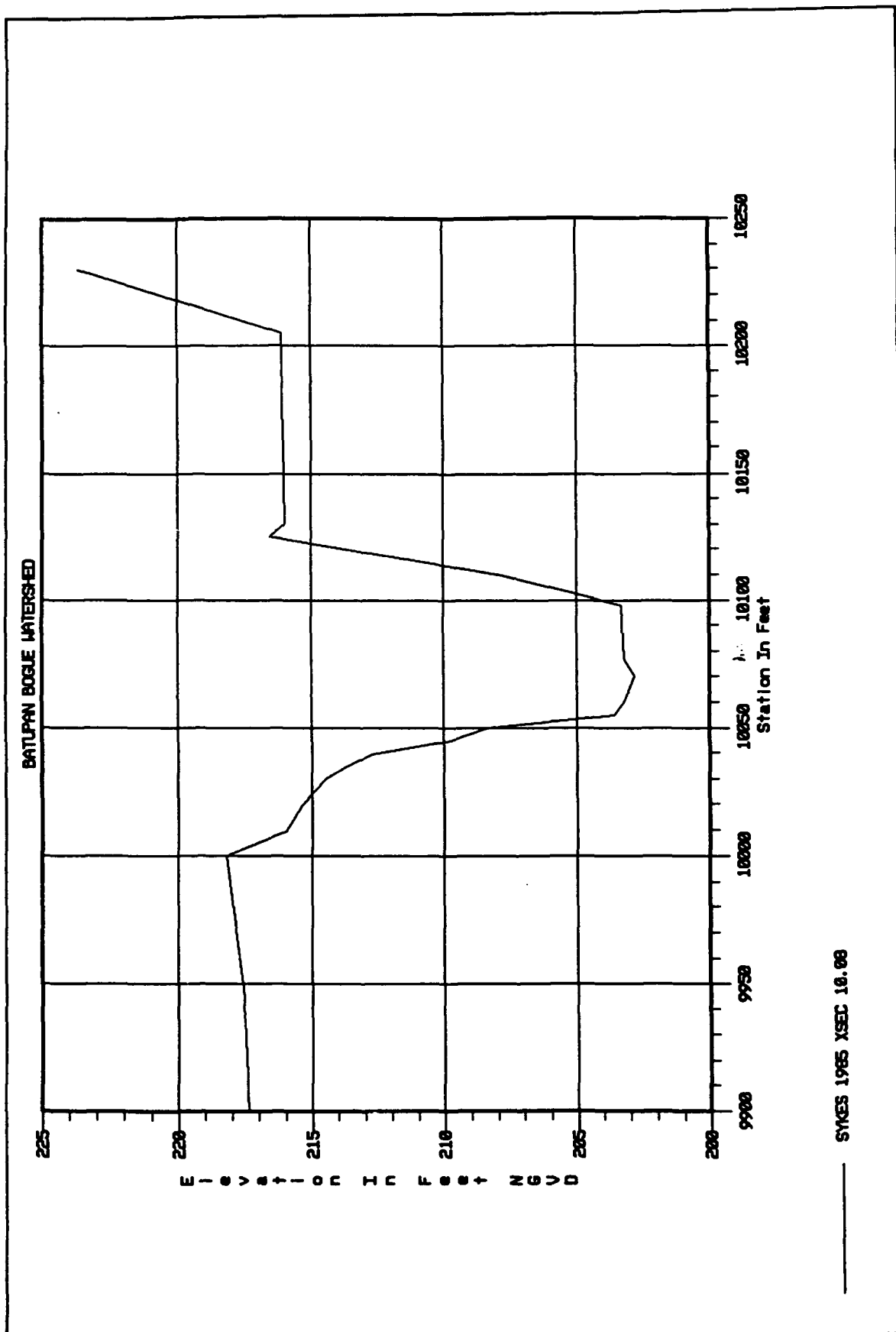
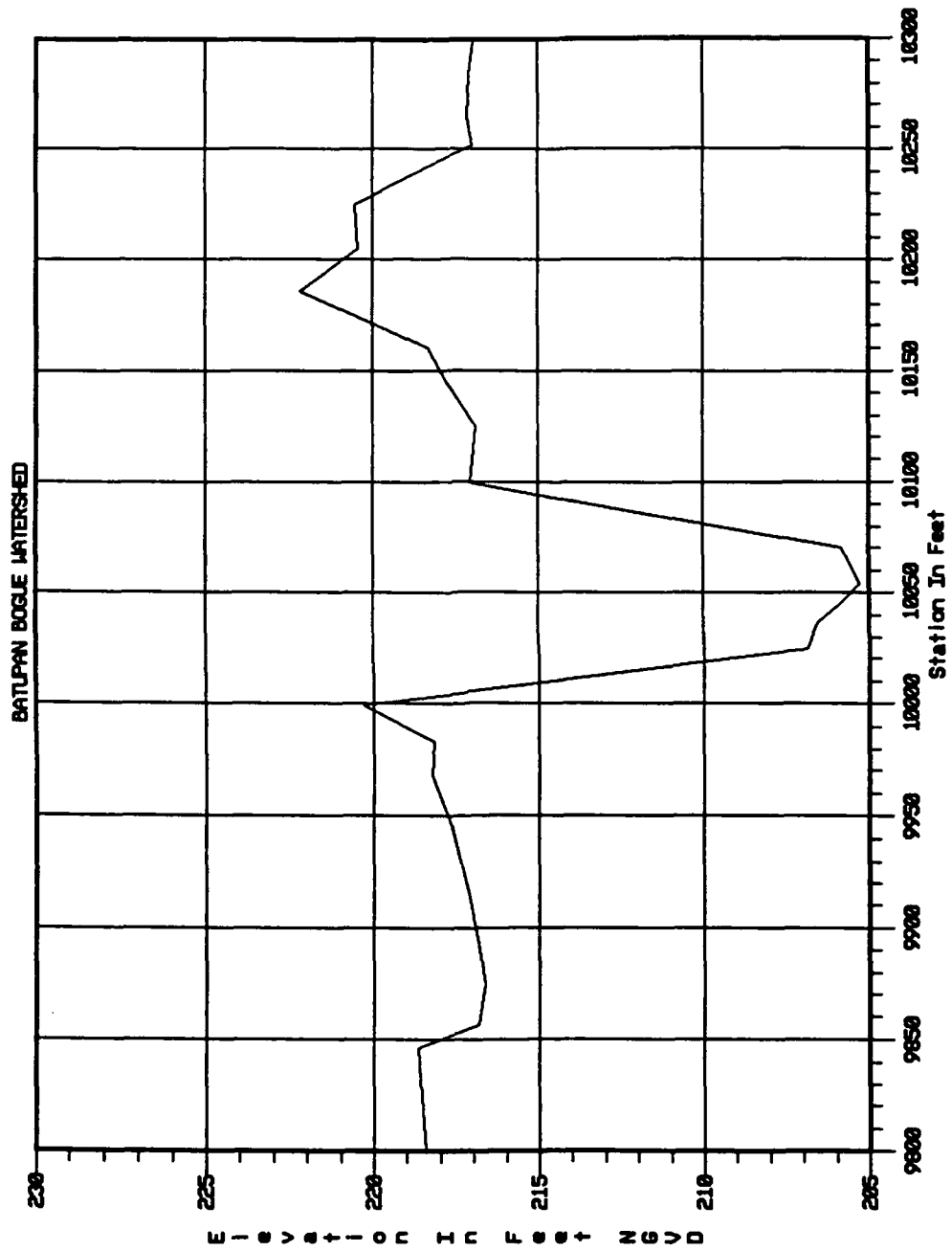
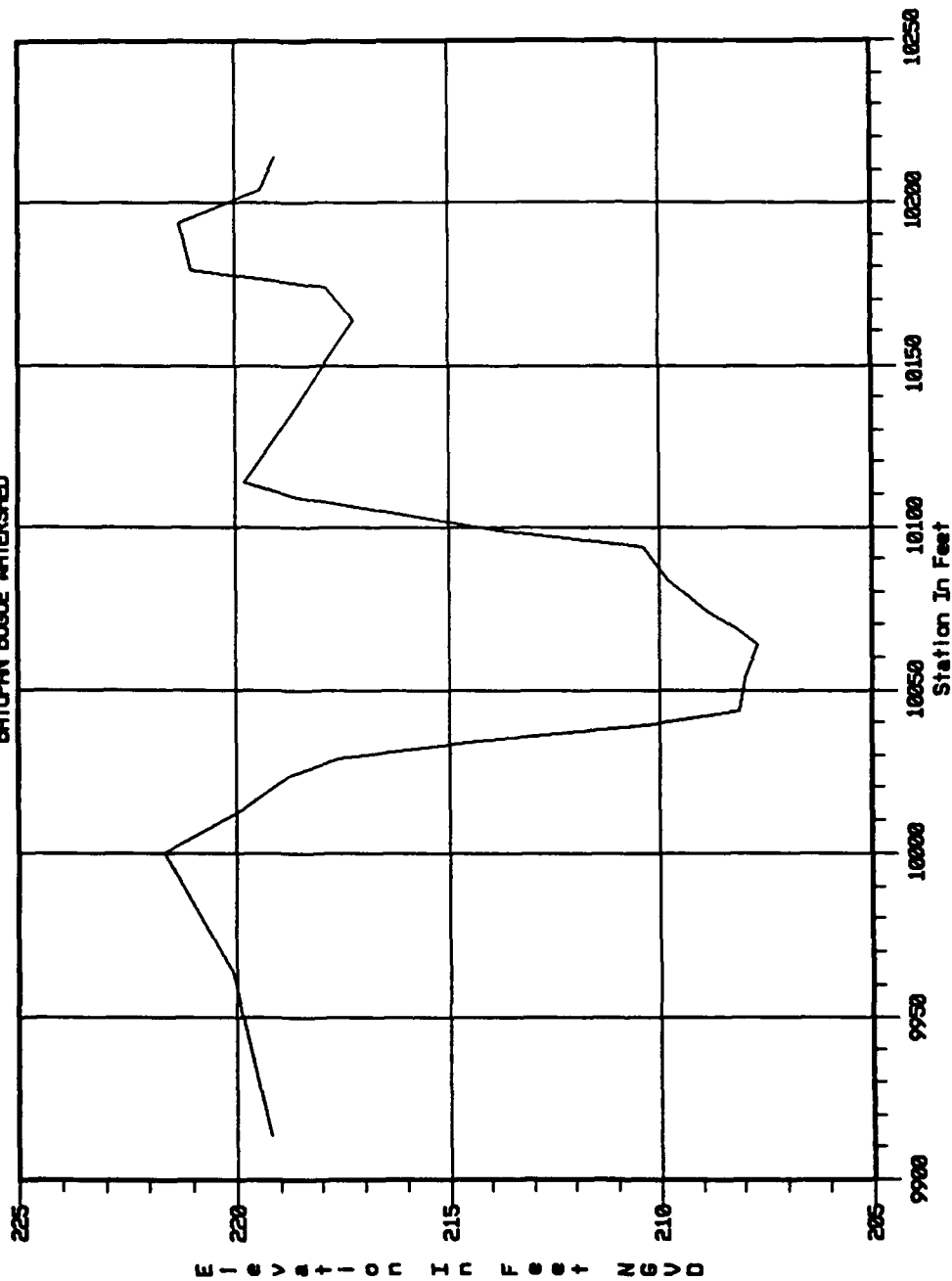


PLATE C124

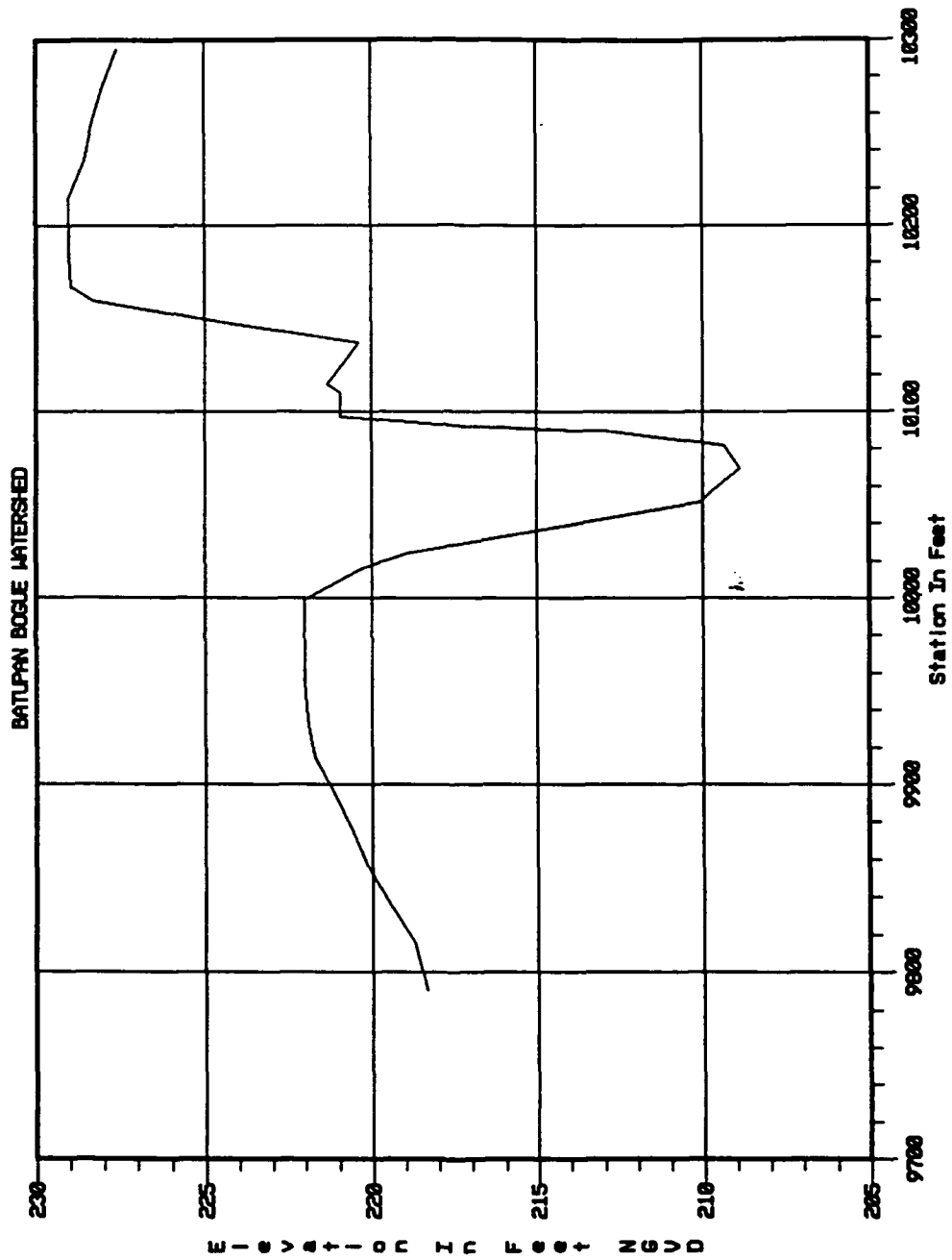


SYNOPSIS 1991 XSEC 3109.

BATUPAN BOGLE WATERSHED

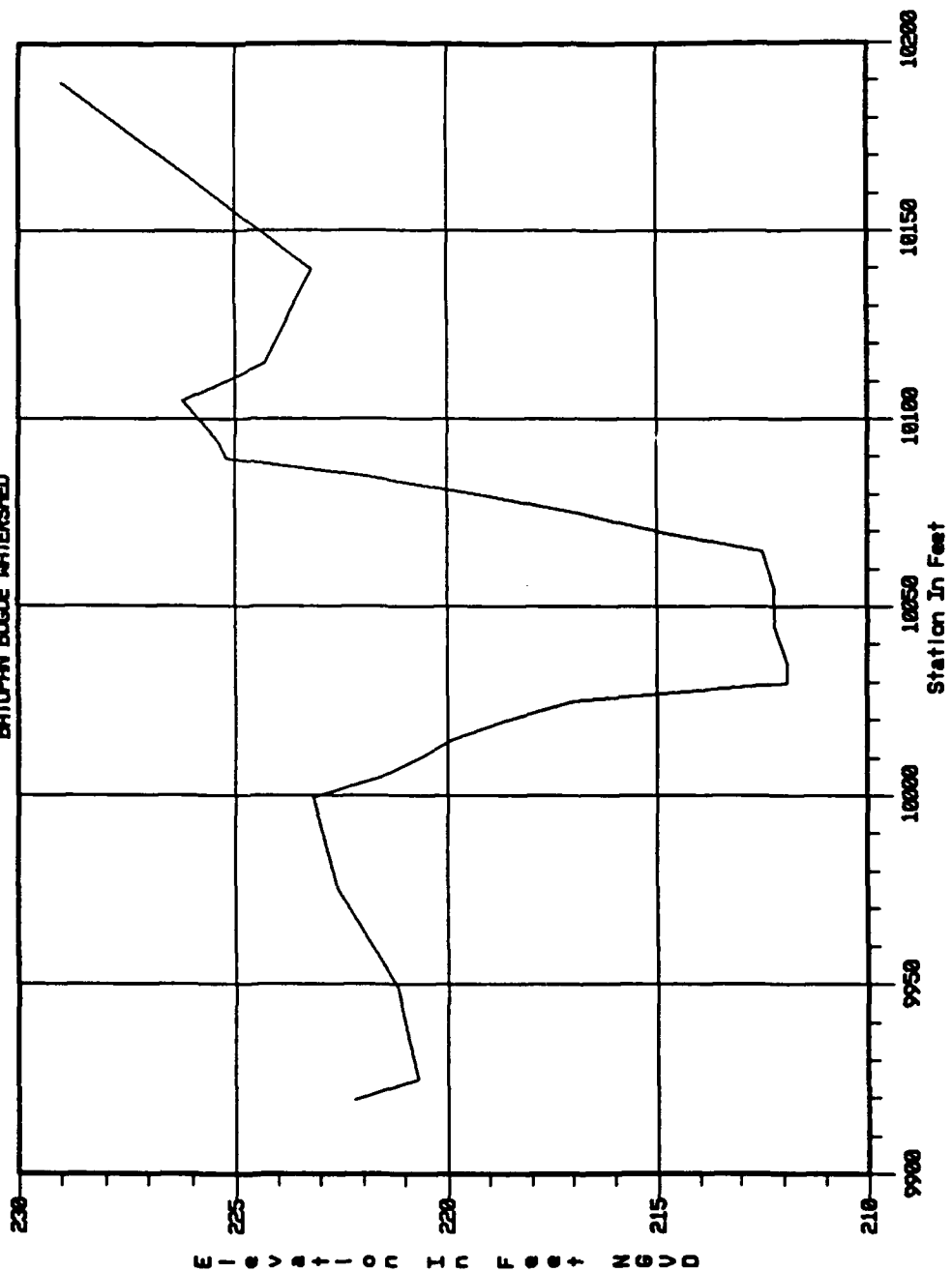


SYKES 1965 XSEC 35.30

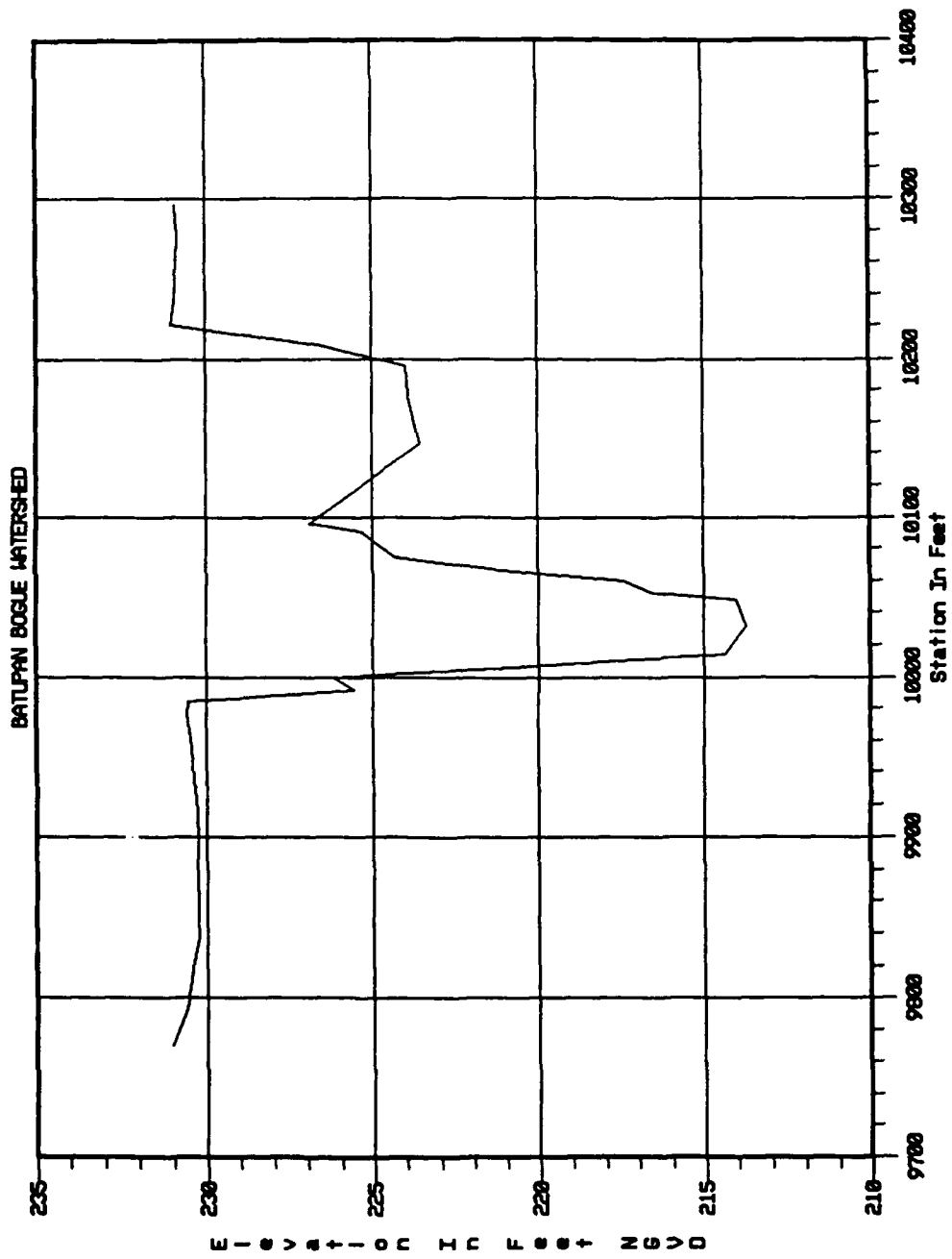


SYNCS 1991 XSEC 5515.

BATUPAN BOGUE WATERSHED

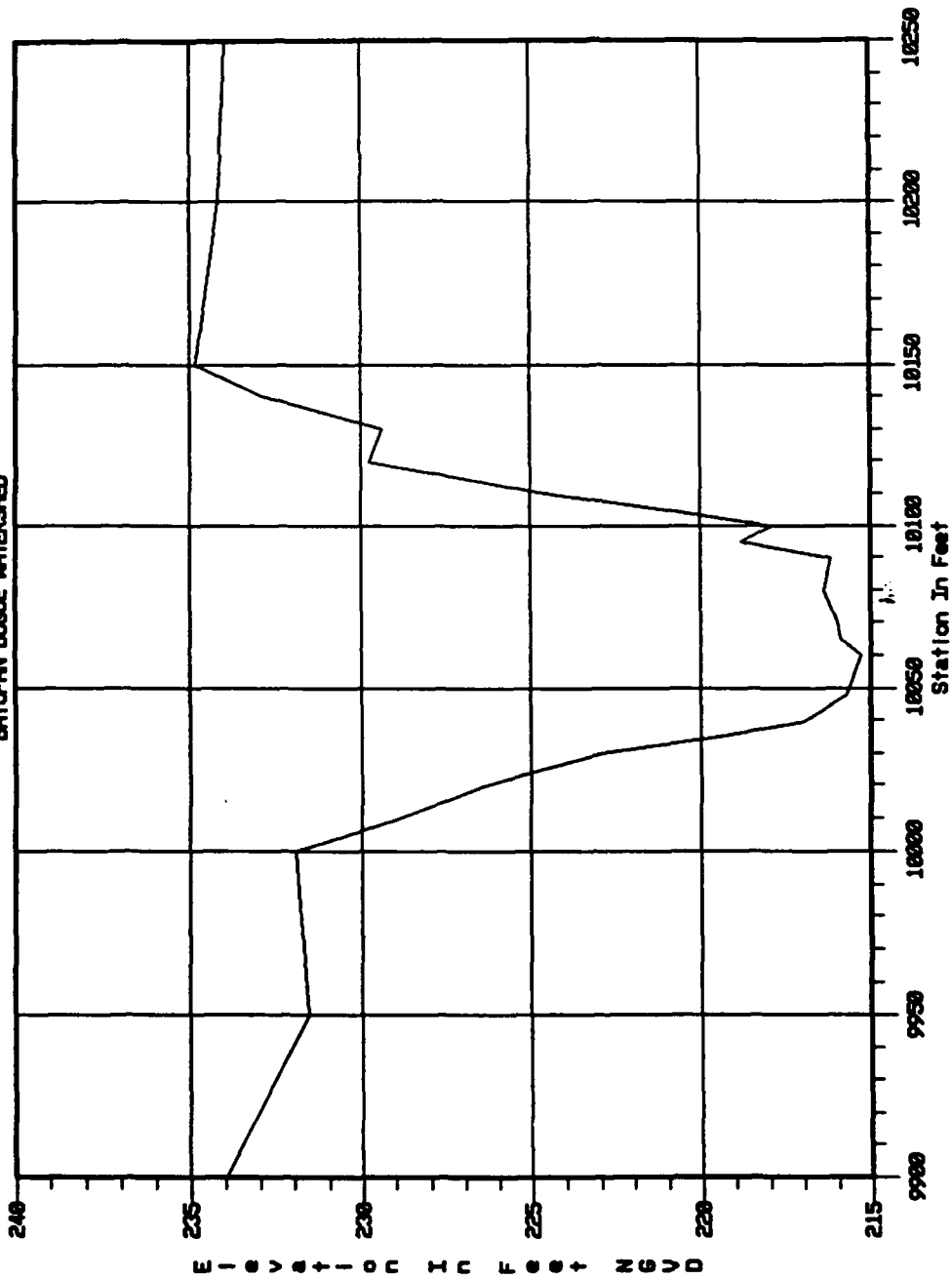


SYNCS 1985 XSEC 84.97

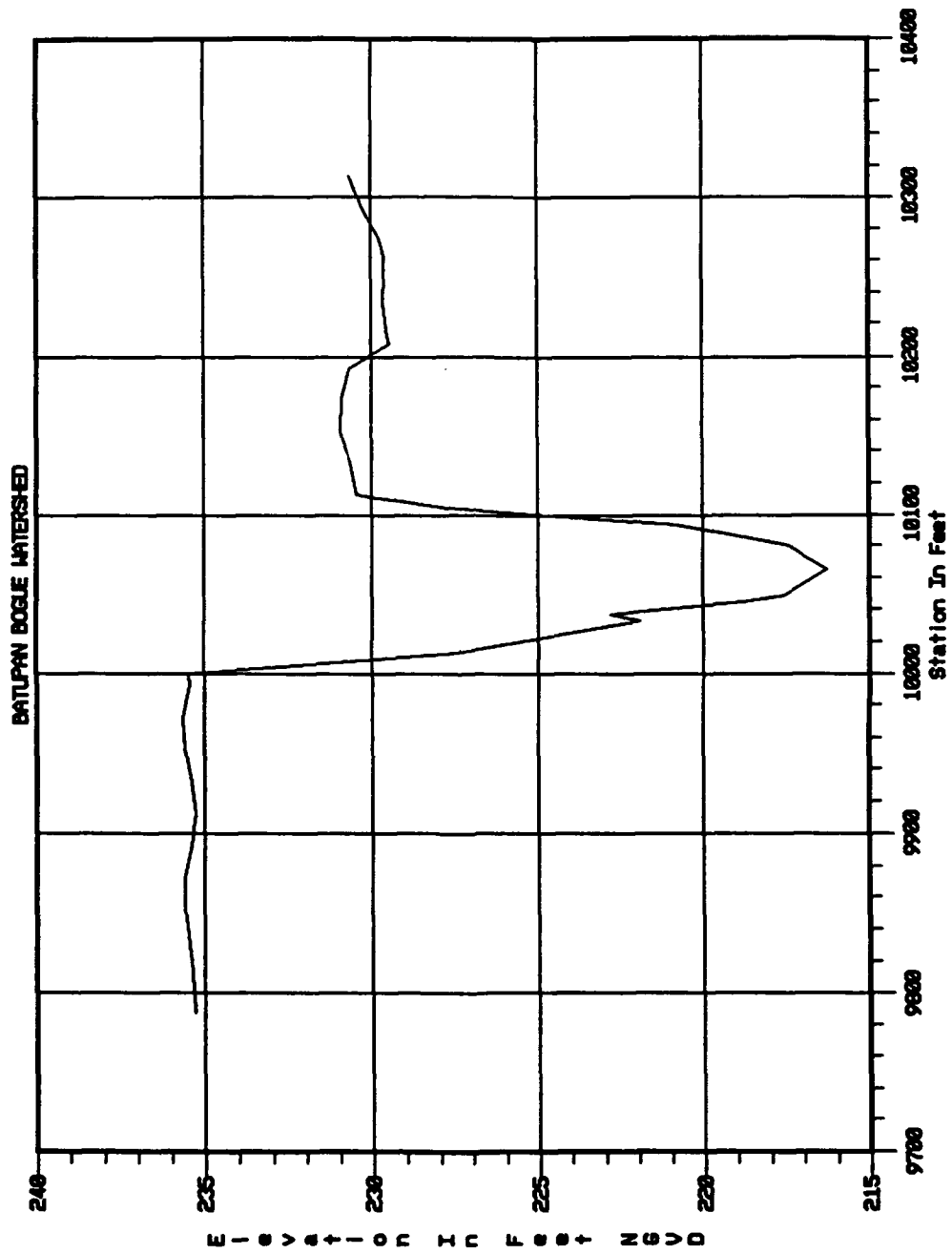


SYKES 1991 XSEC 8000.

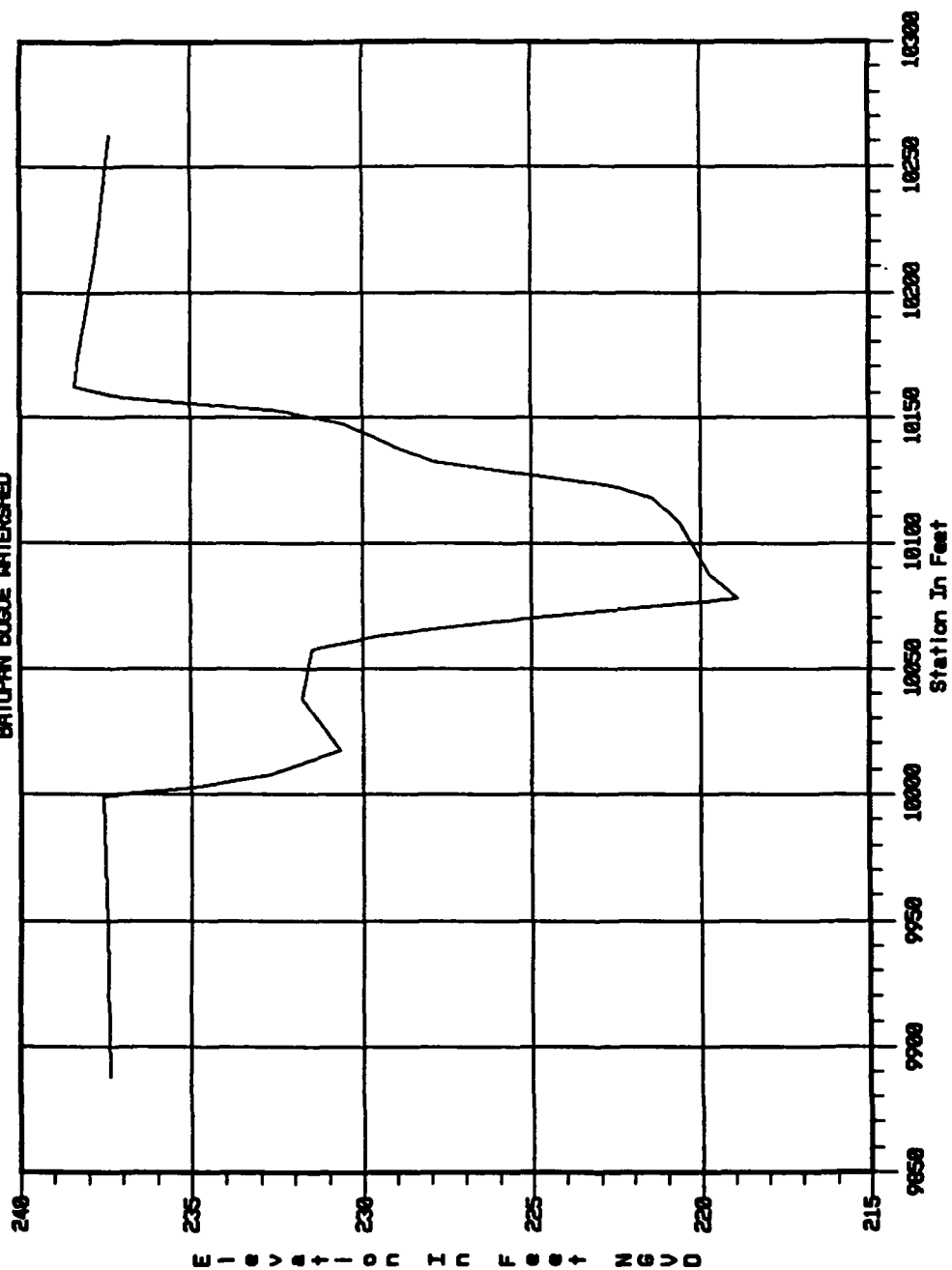
BATUPAN BOGLE WATERSHED



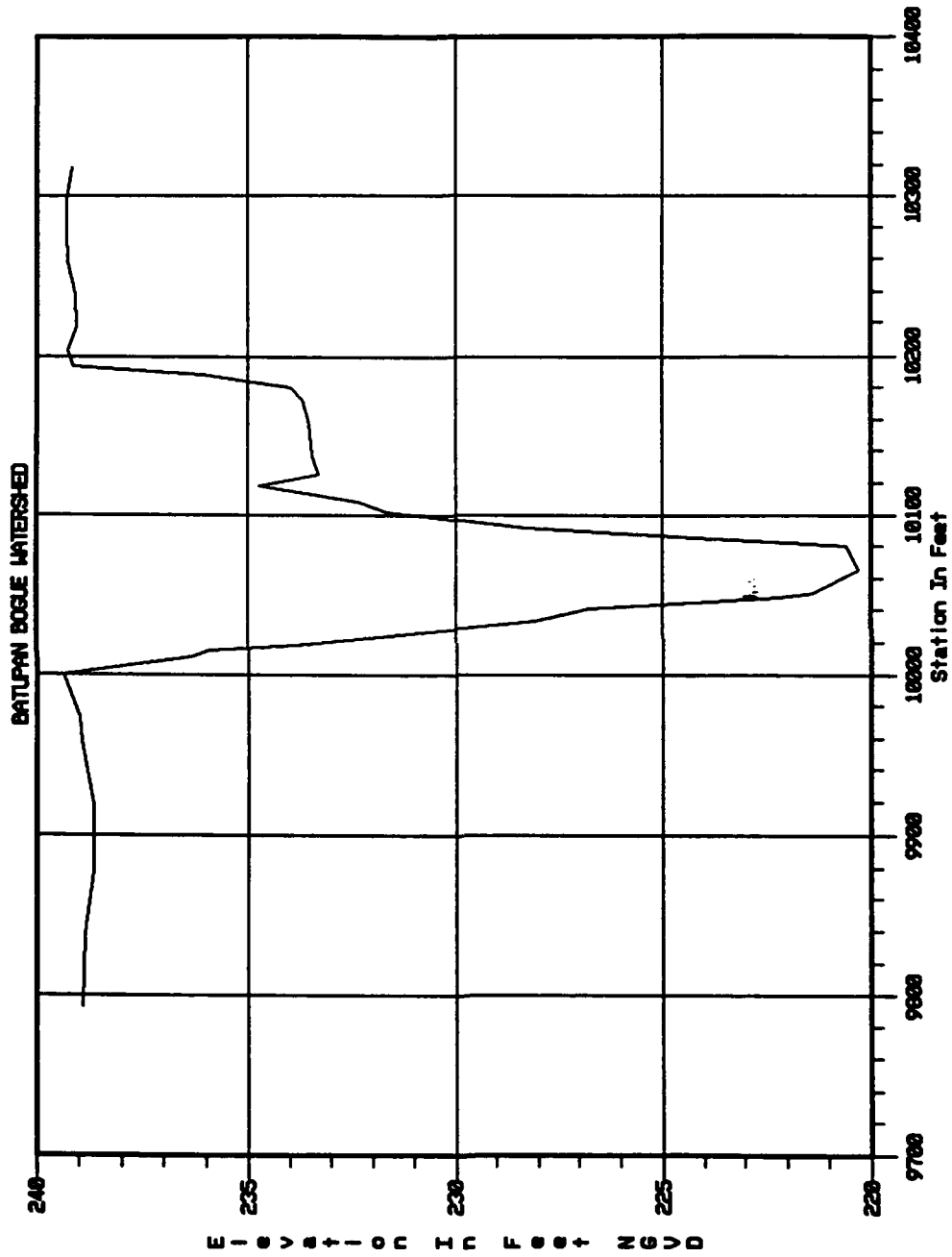
SYNCS 1965 XSEC 69.00



BATUPAN BOGLE INTERSECT

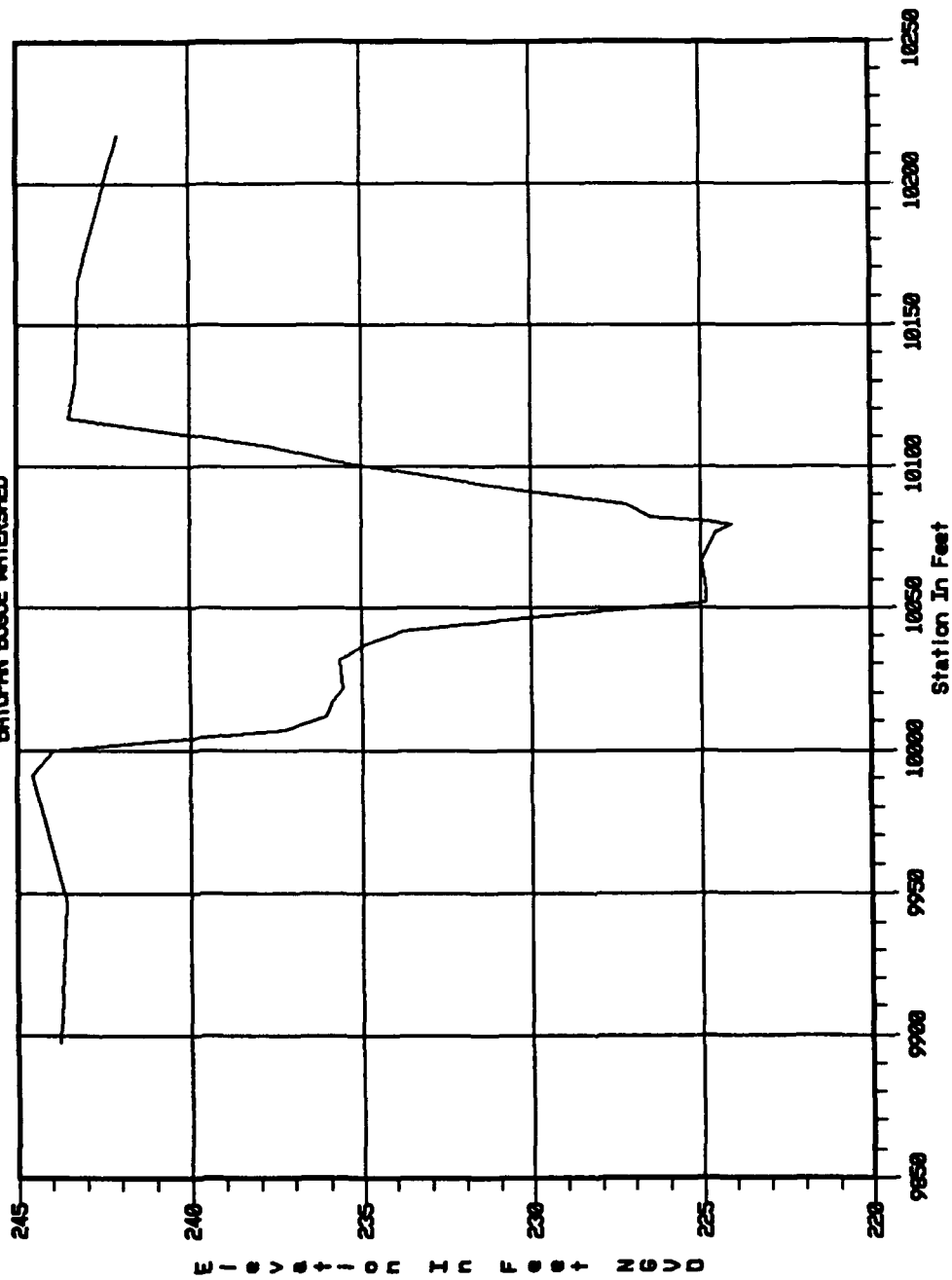


SYNCH 1985 XSEC 115.00

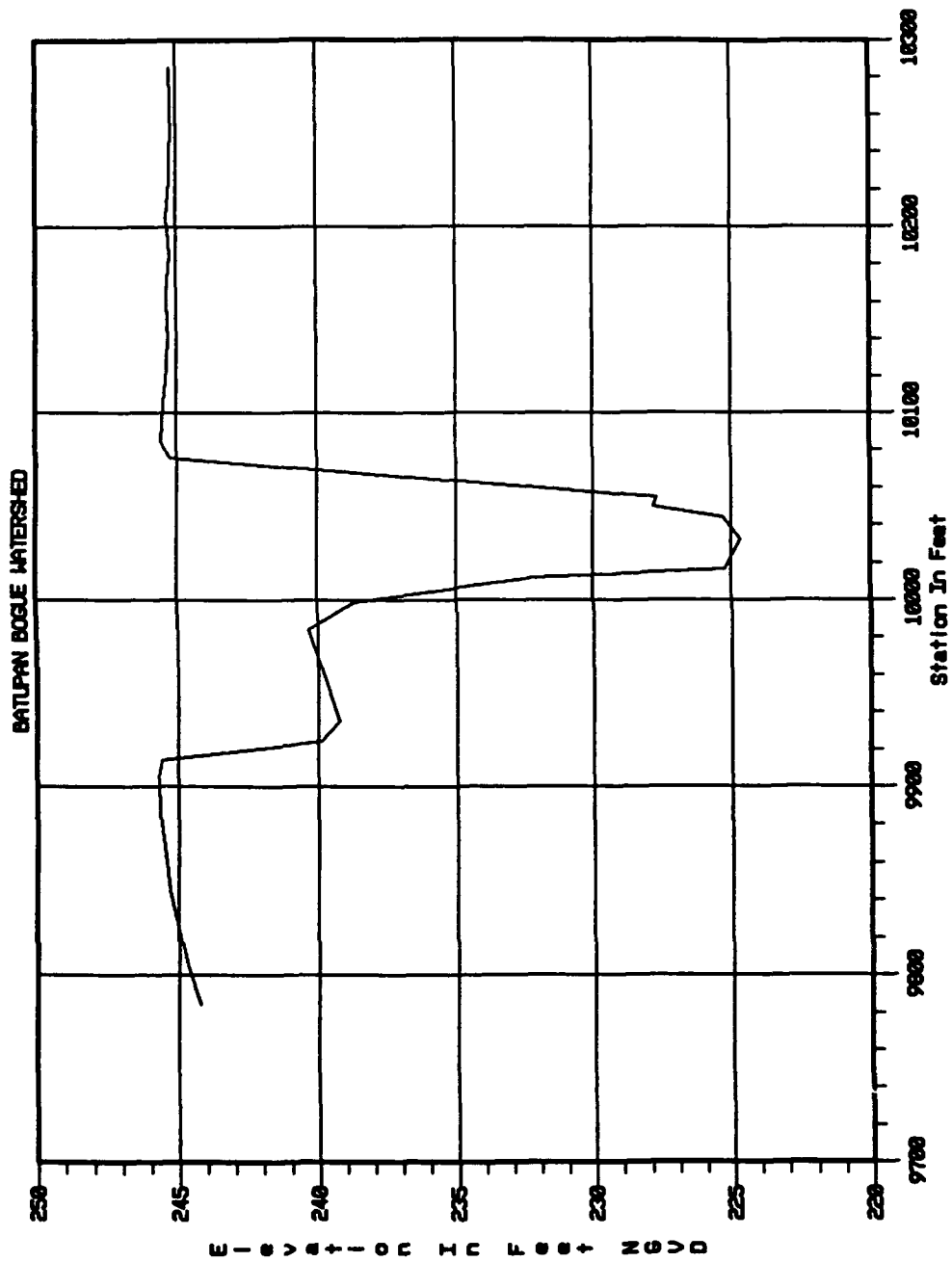


SYNCS 1991 XSEC 13000.

BATUPAN BOGLE WATERSHED

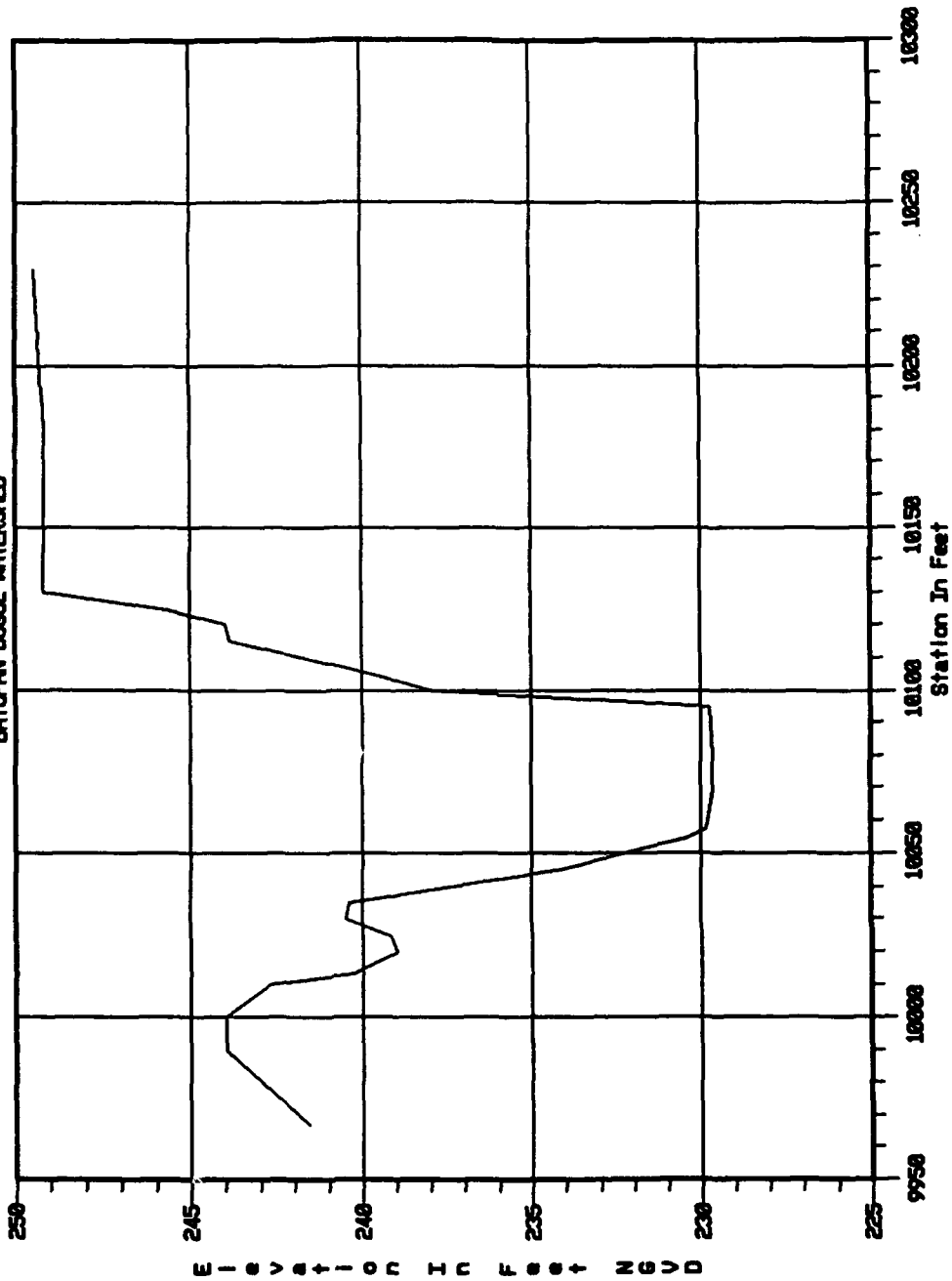


SYNCS 1965 XSEC 144.00

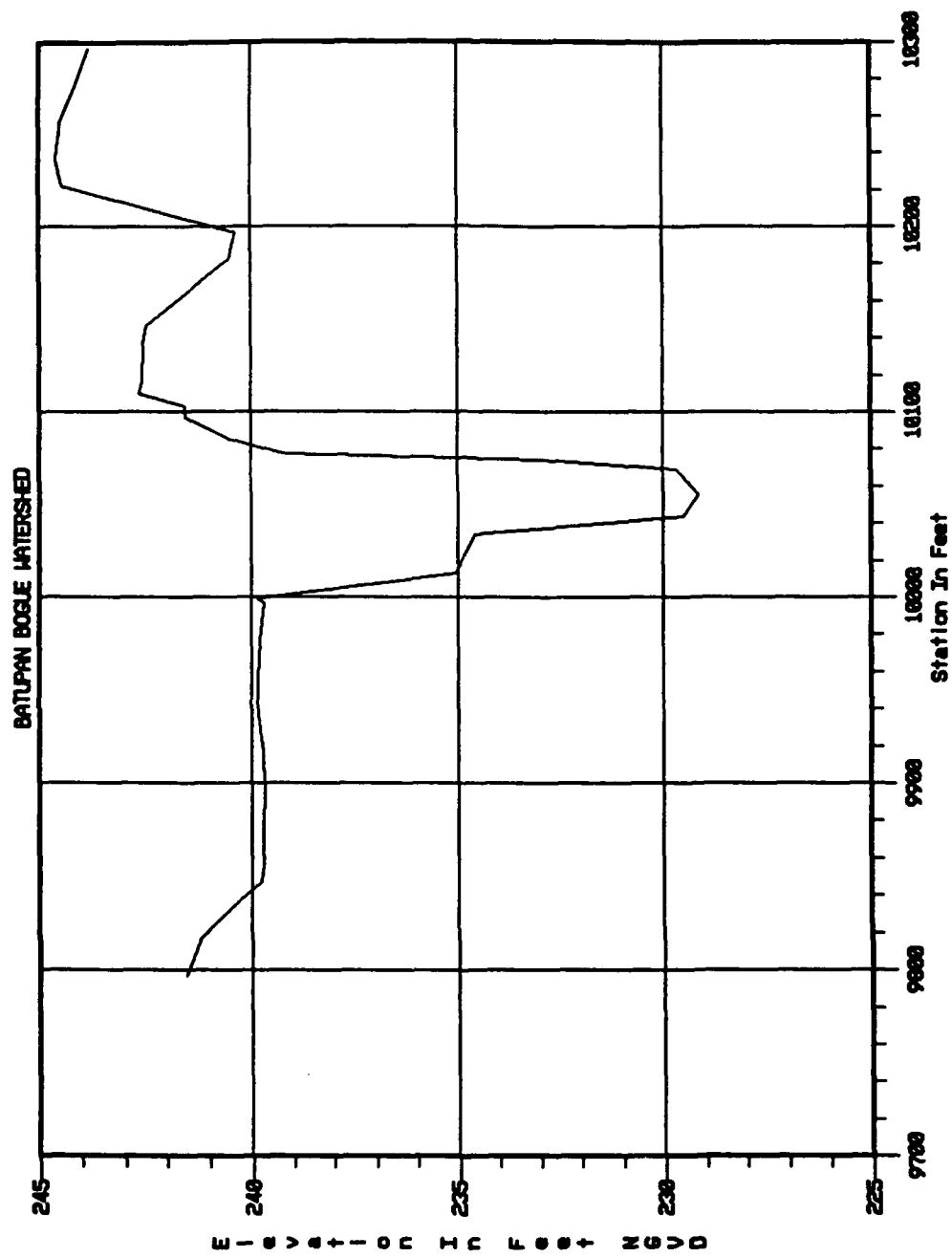


SYNCS 1991 XSEC 15500.

BATUPAN BOGLE WATERSHED

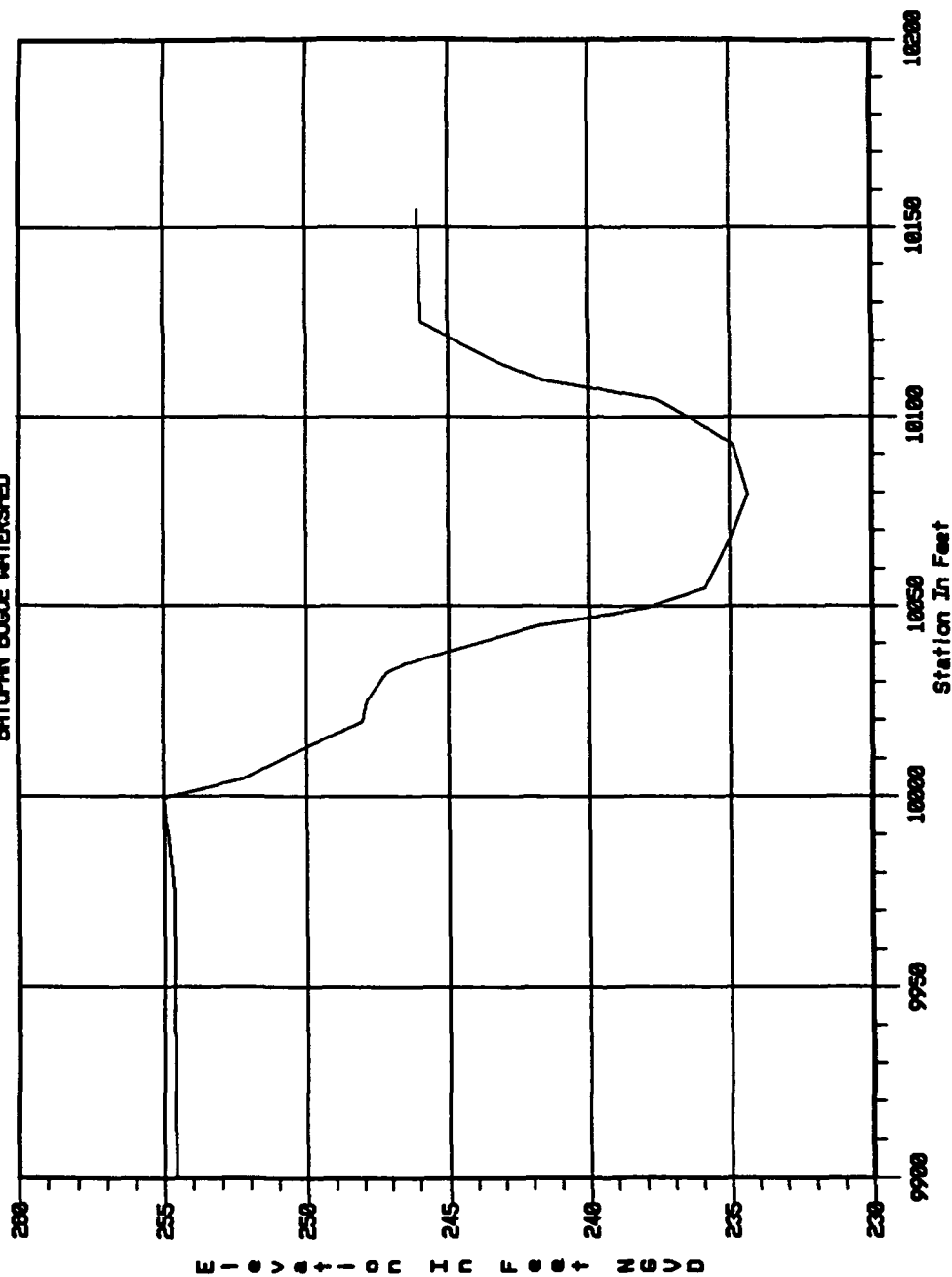


SYNCS 1965 XSEC 170.00

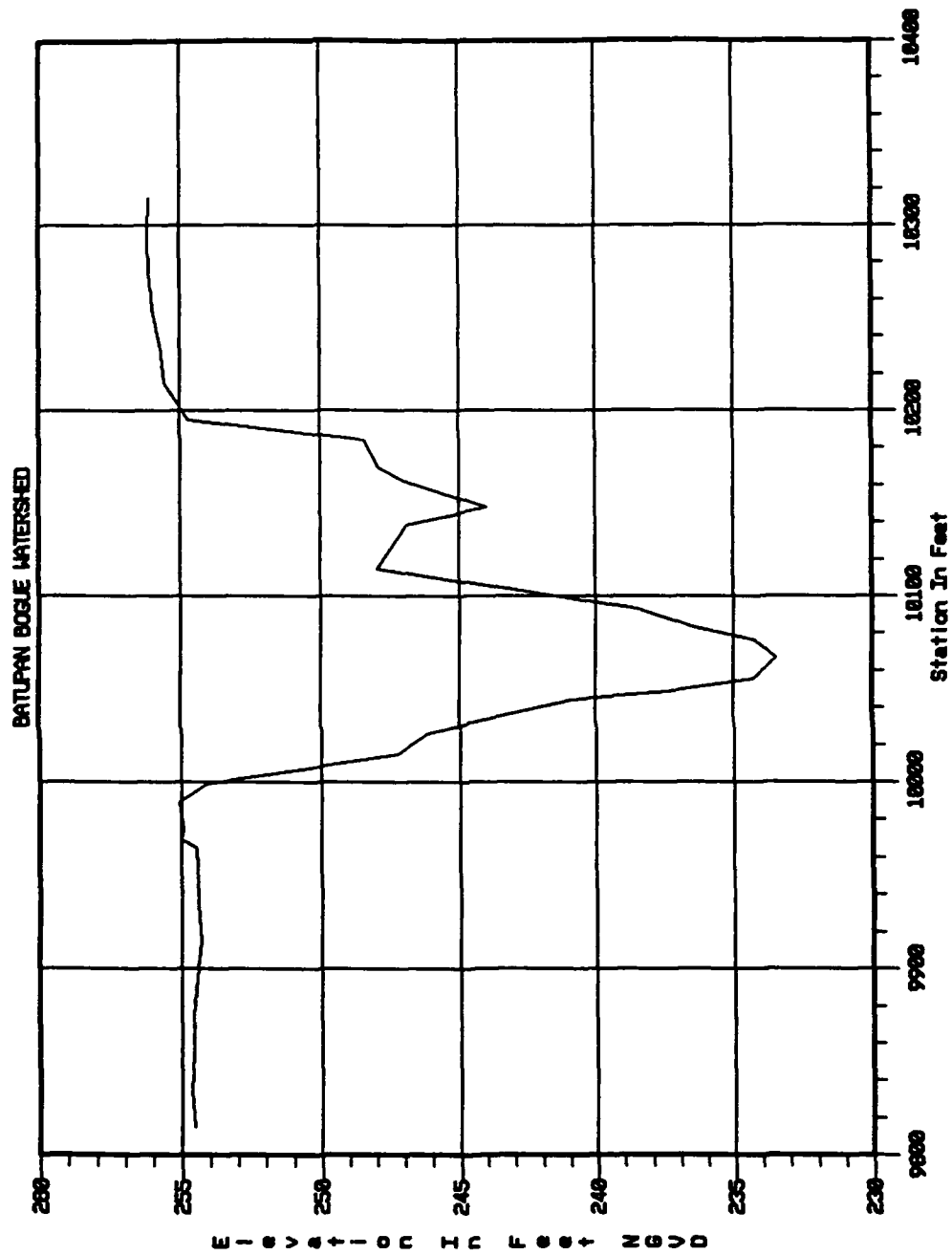


—— SINES 1991 XSEC 18100.

BATUPAN BOGLE WATERSHED

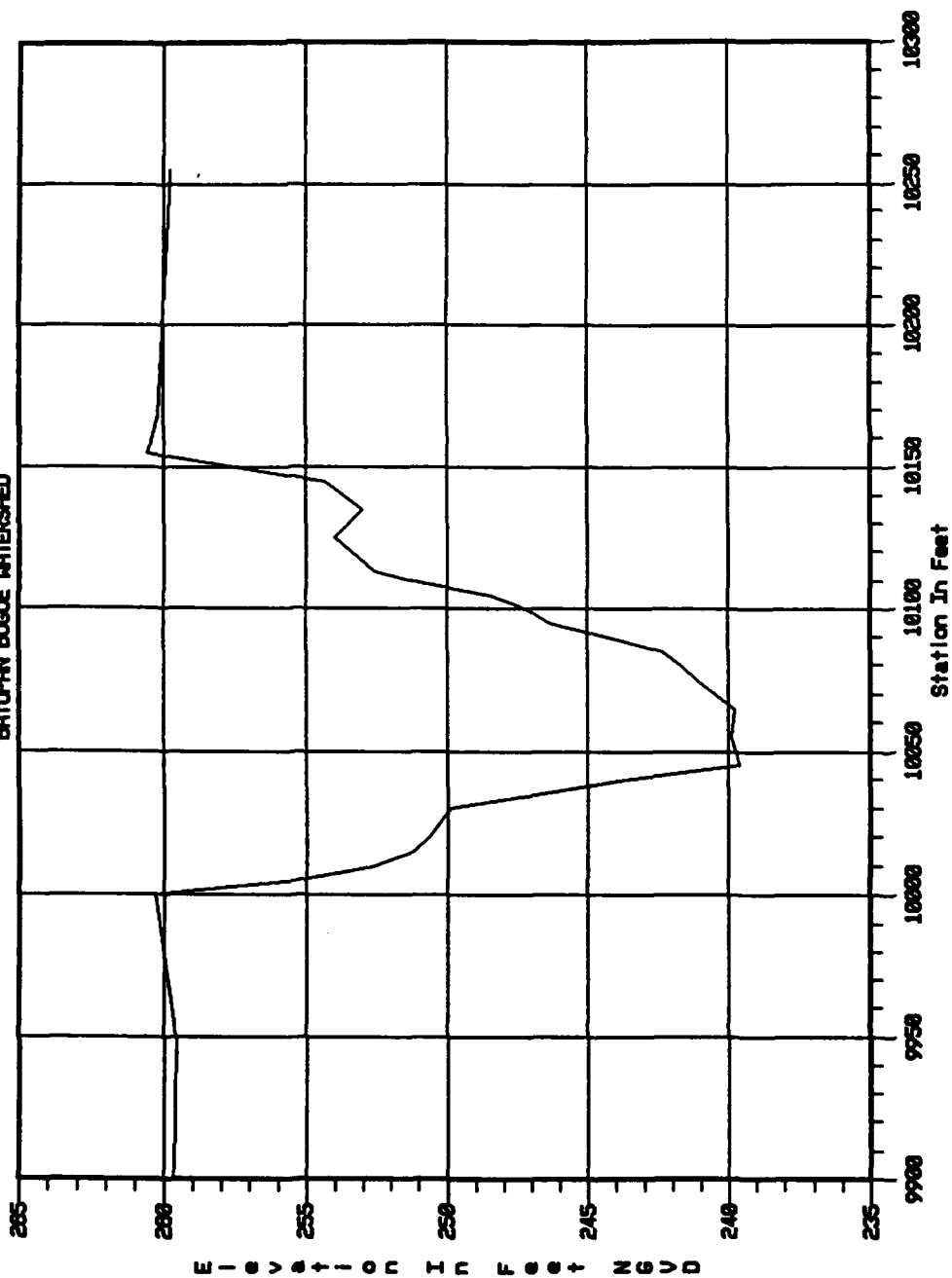


—— SINES 1965 XSEC 199.78

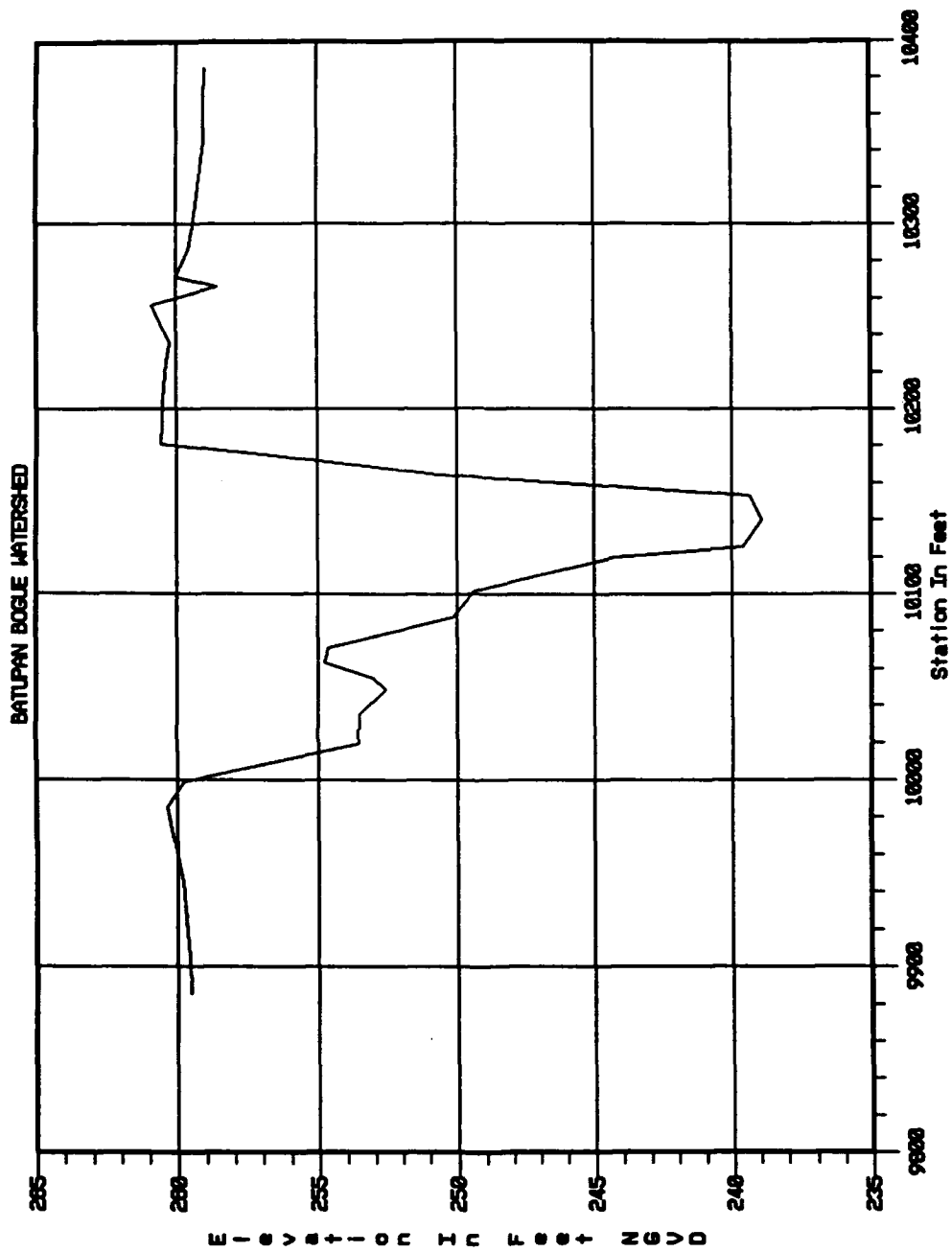


SYNCS 1991 XSEC 28700.

BATUPAN BOGLE WATERSHED

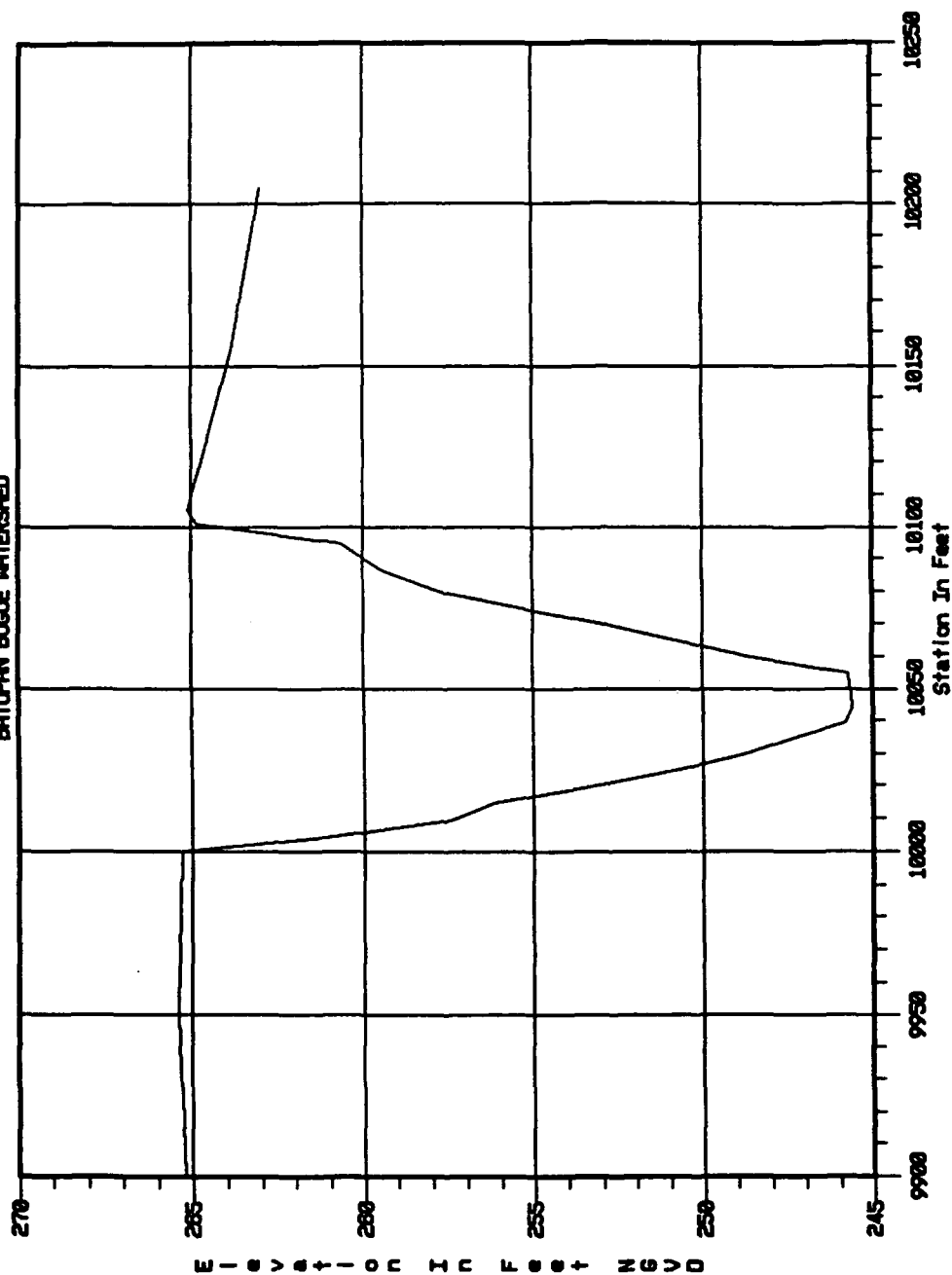


SYKES 1965 XSEC 228.08

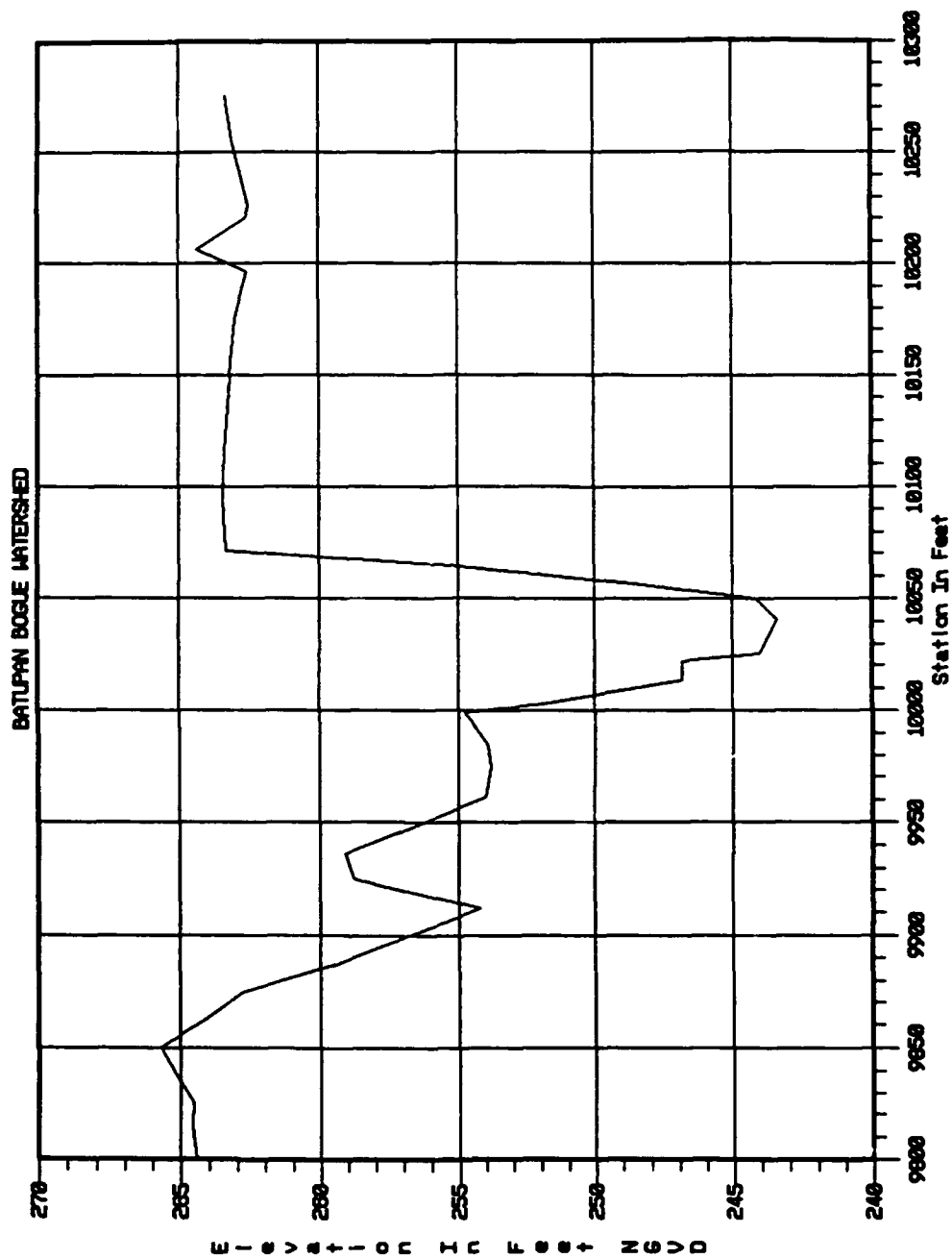


SYNCS 1991 XSEC 23200.

BATUPAN BOGLE WATERSHED

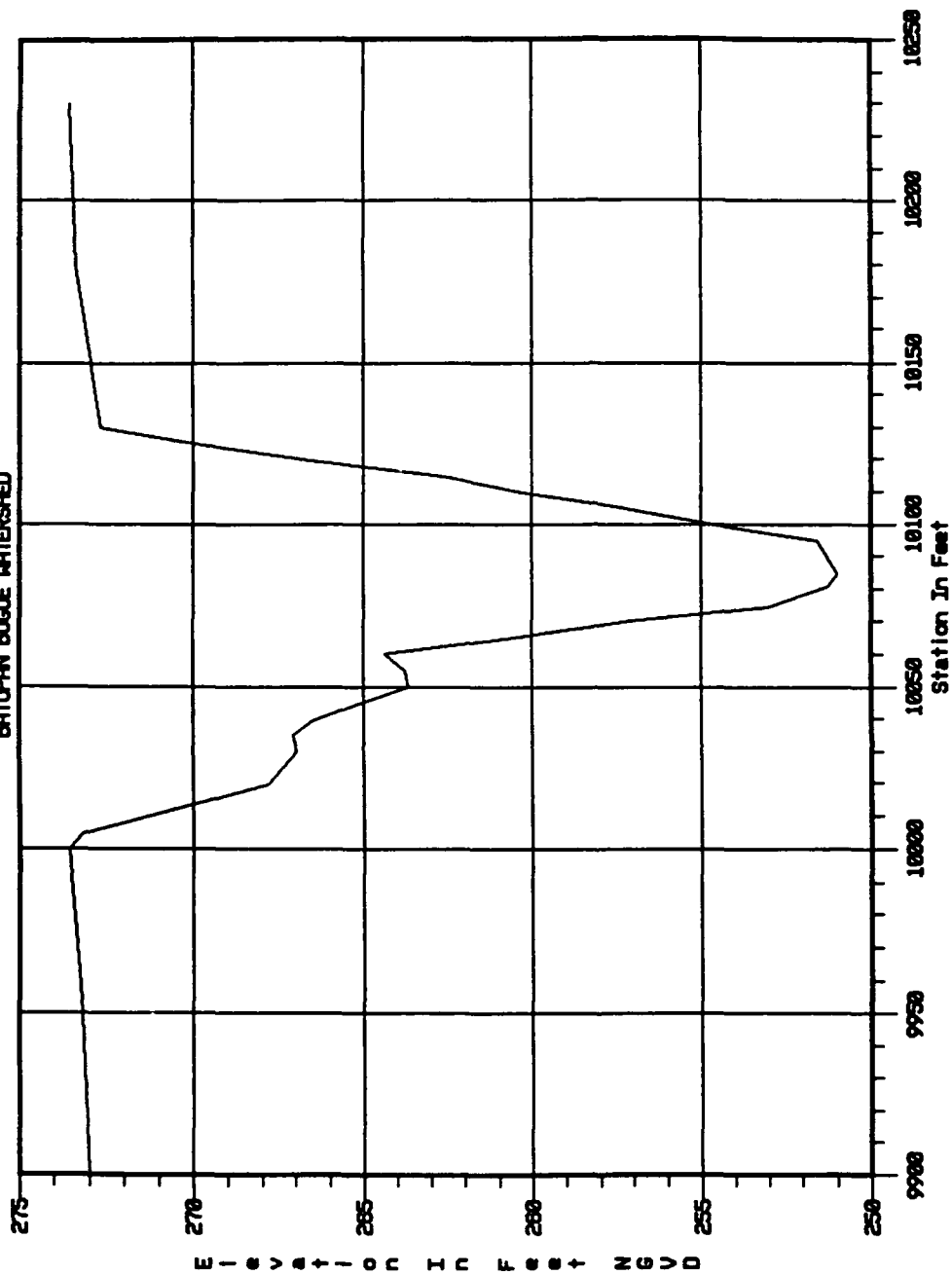


SYNCH 1965 XSEC 253.50

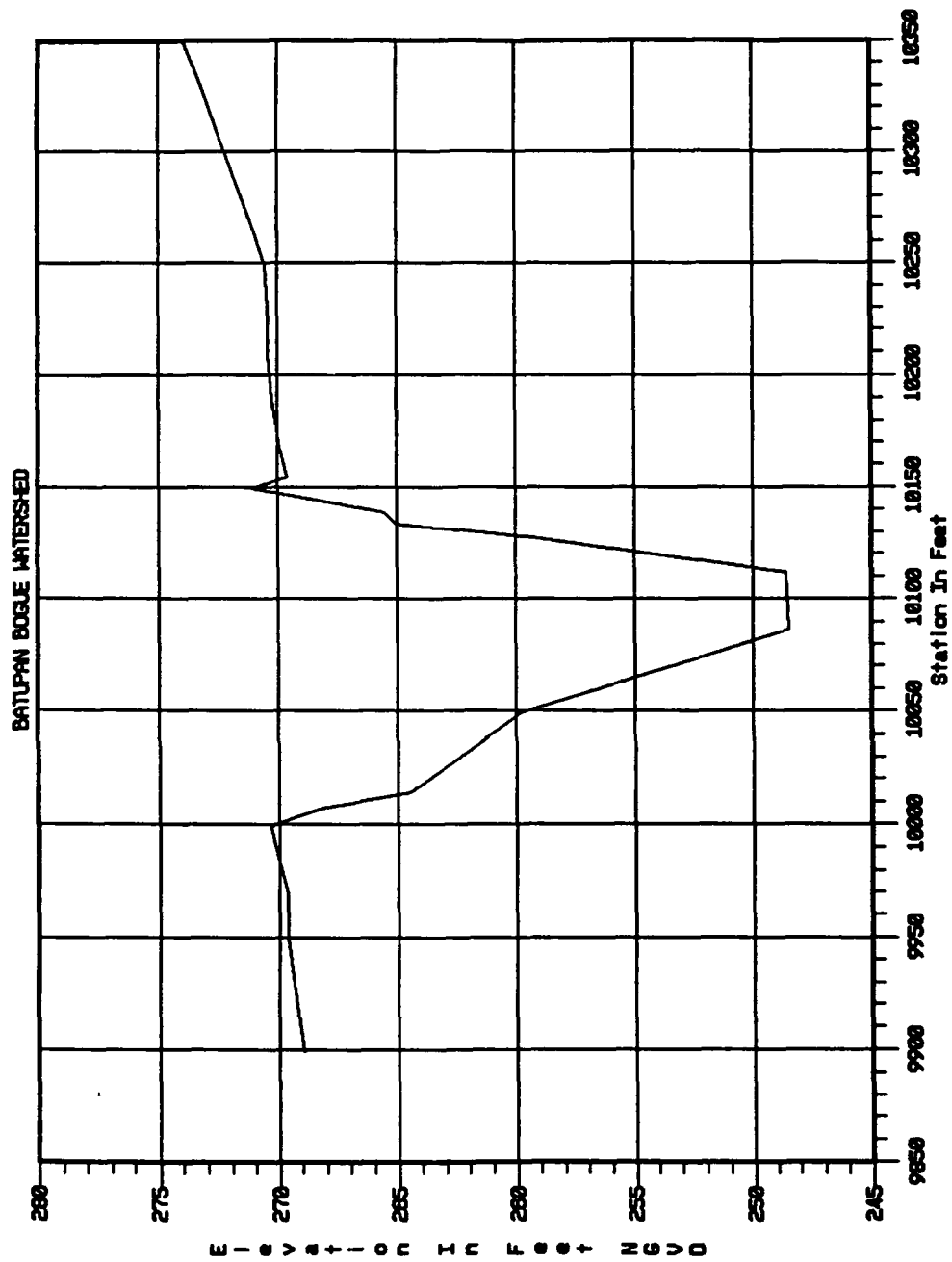


SYKES 1991 XSEC 25700.

BATUPAN BOGUE WATERSHED

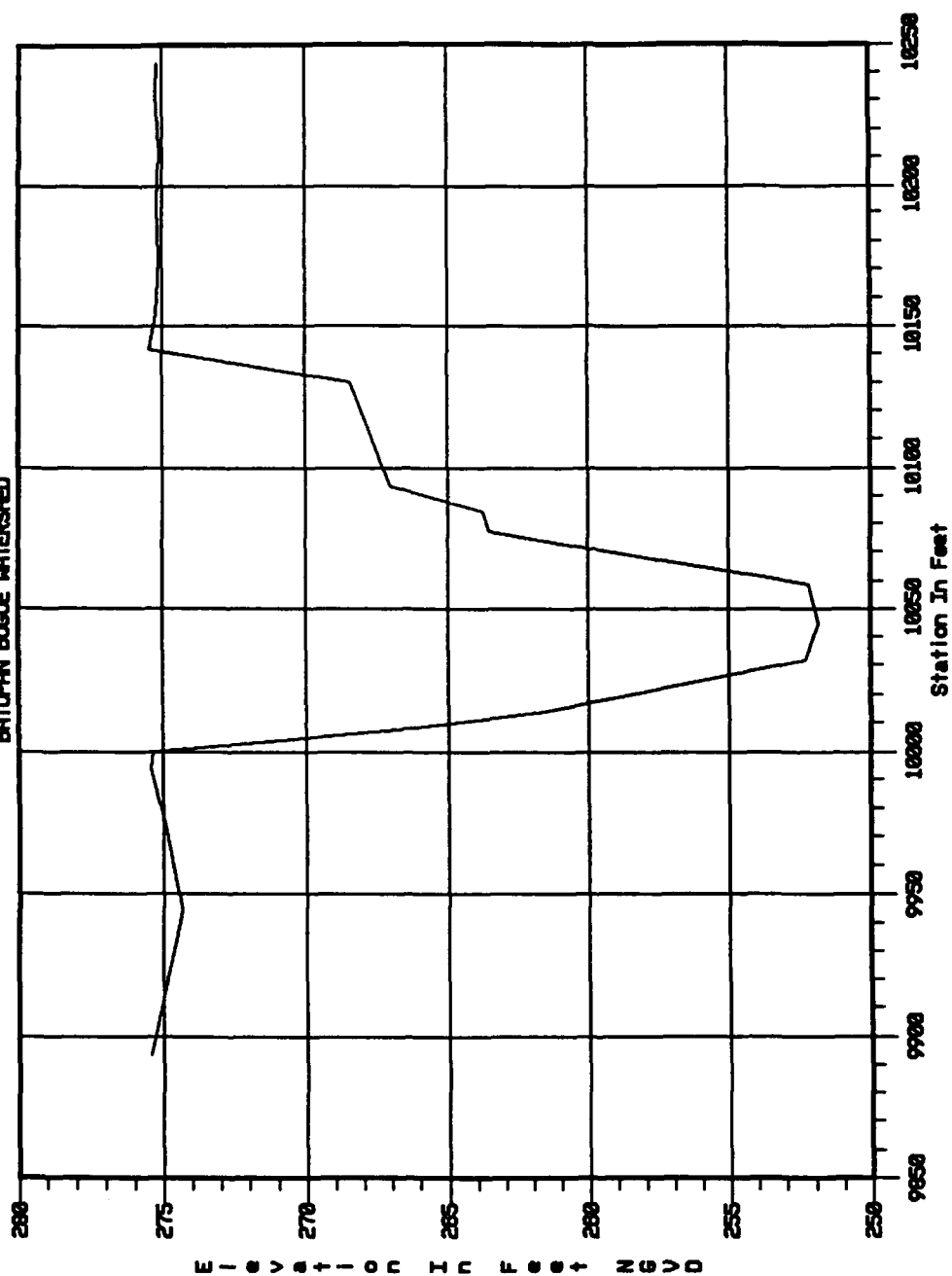


SYNOPSIS 1965 XSEC 281.29

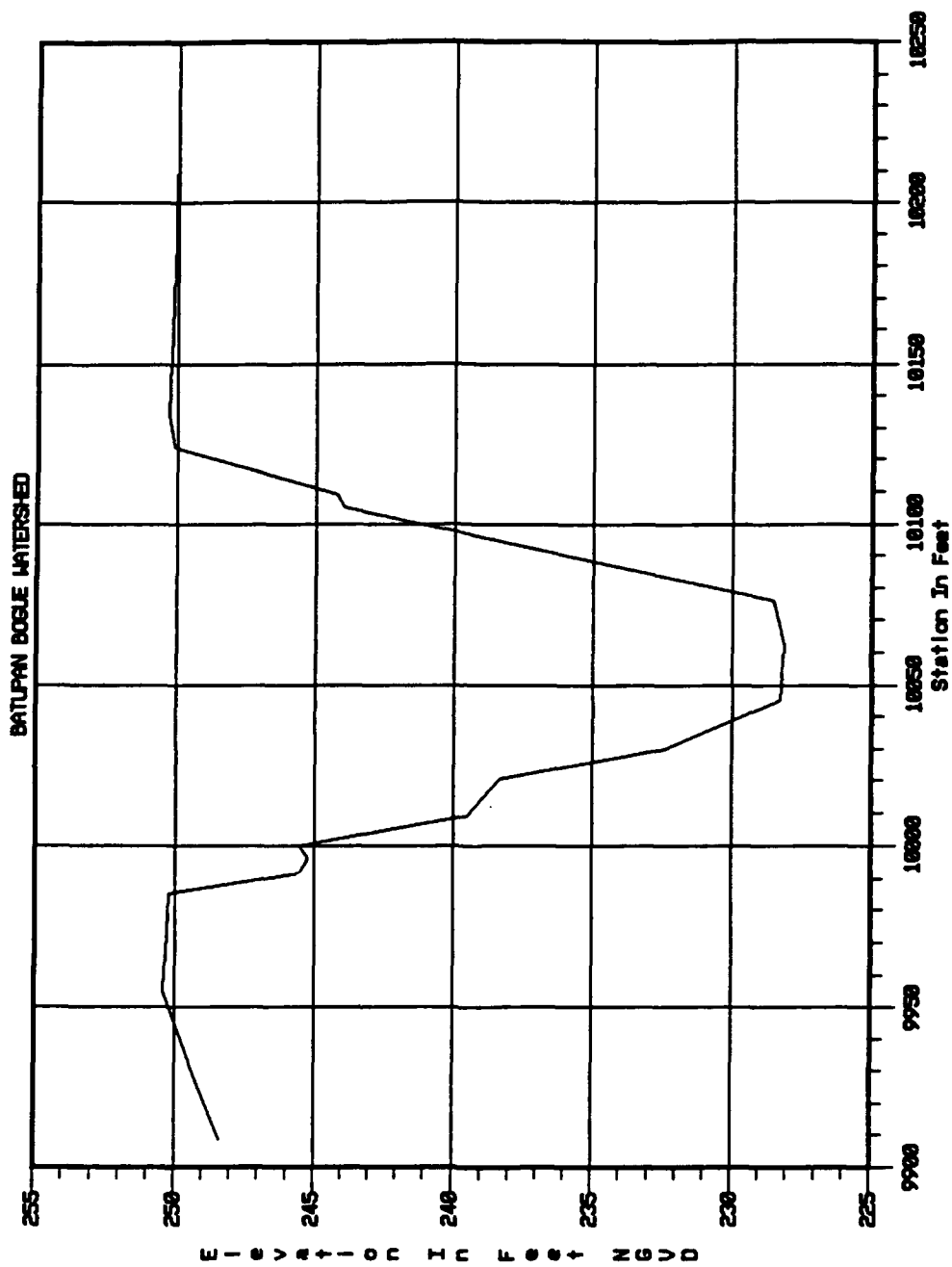


SYKES 1991 XSEC 28200.

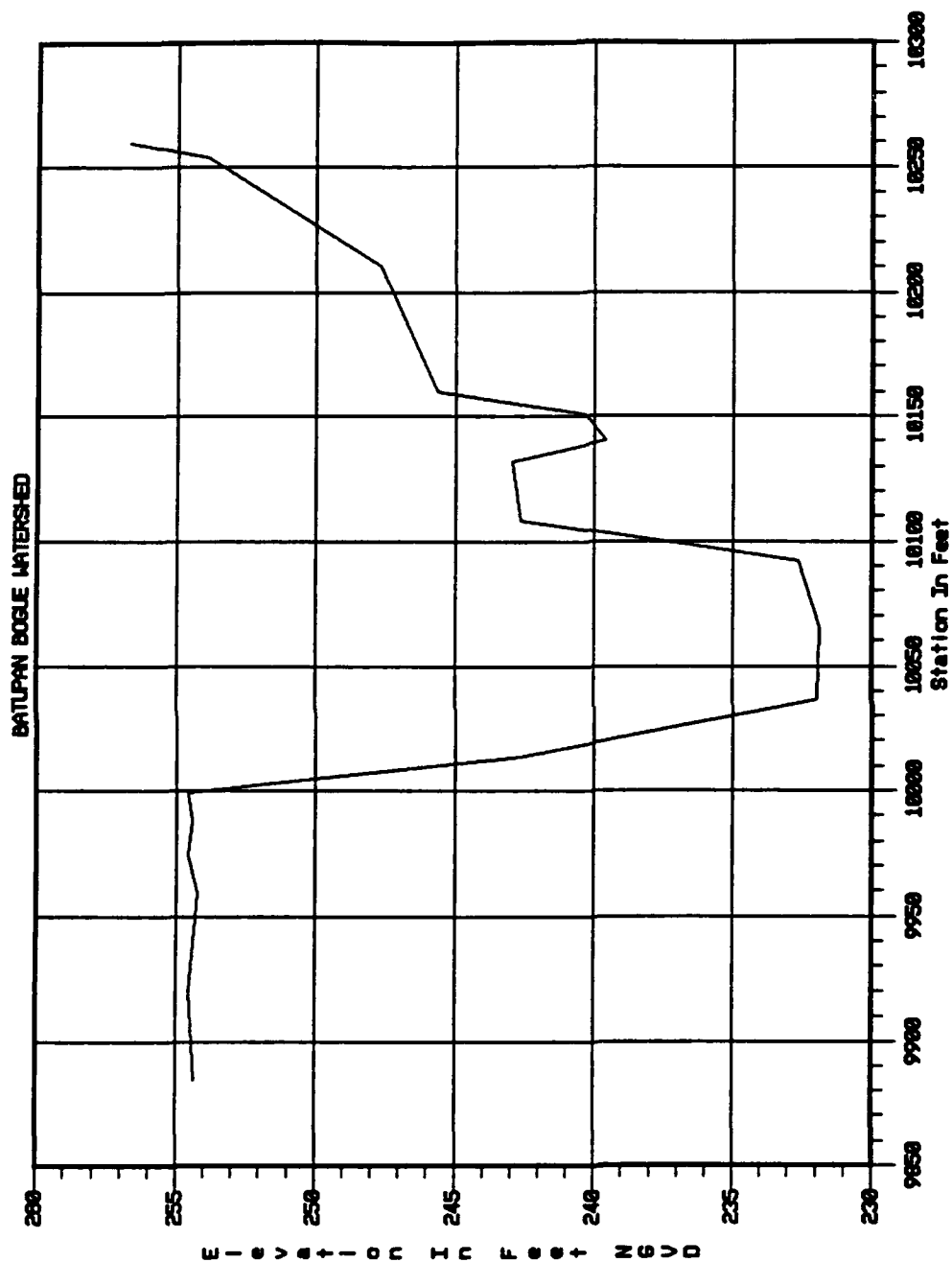
BATUPAN BOGUE WATERSHED



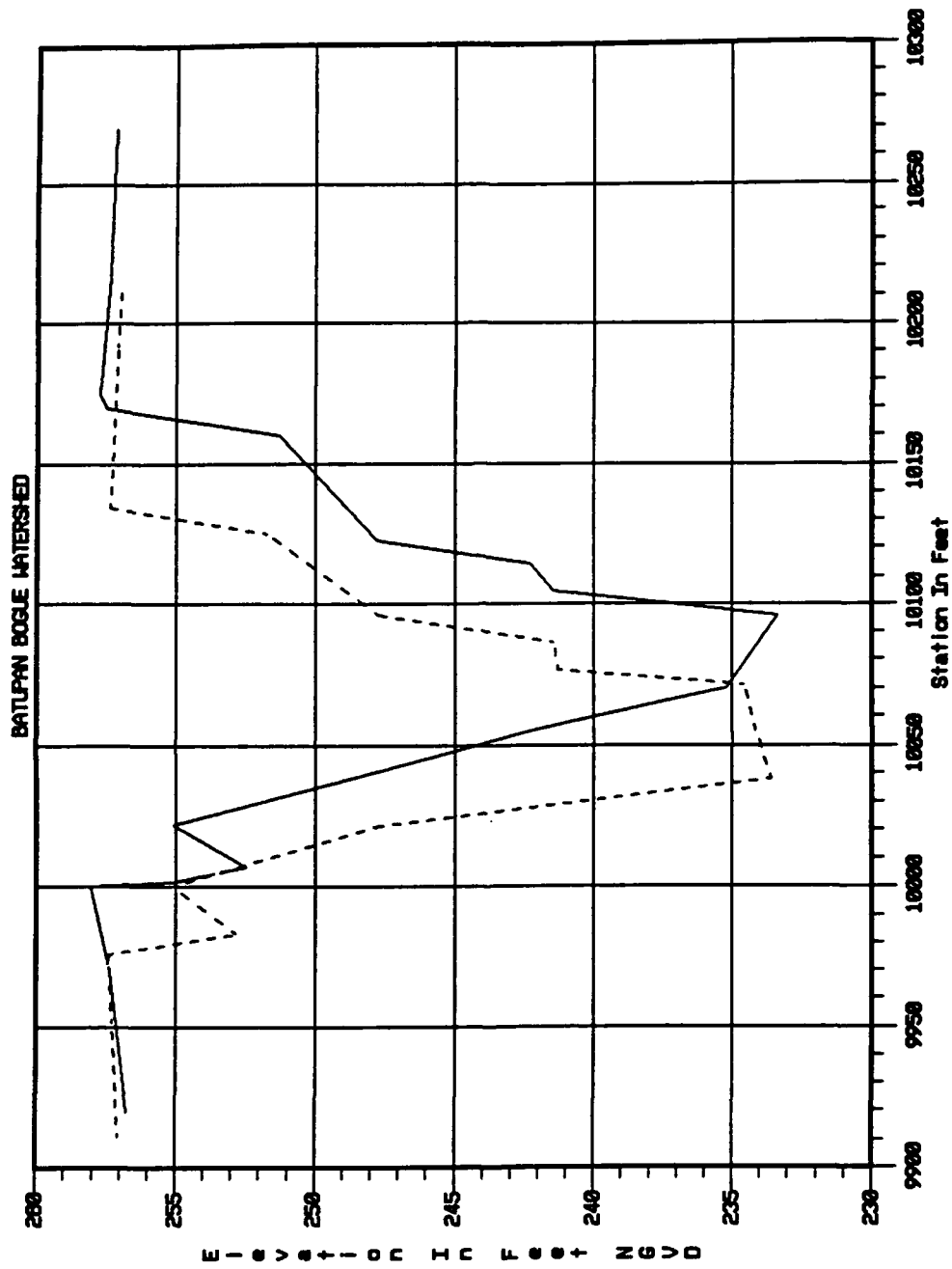
SYNCS 1991 XSEC 30030.



WDRSHM 1991 XSEC 20.00

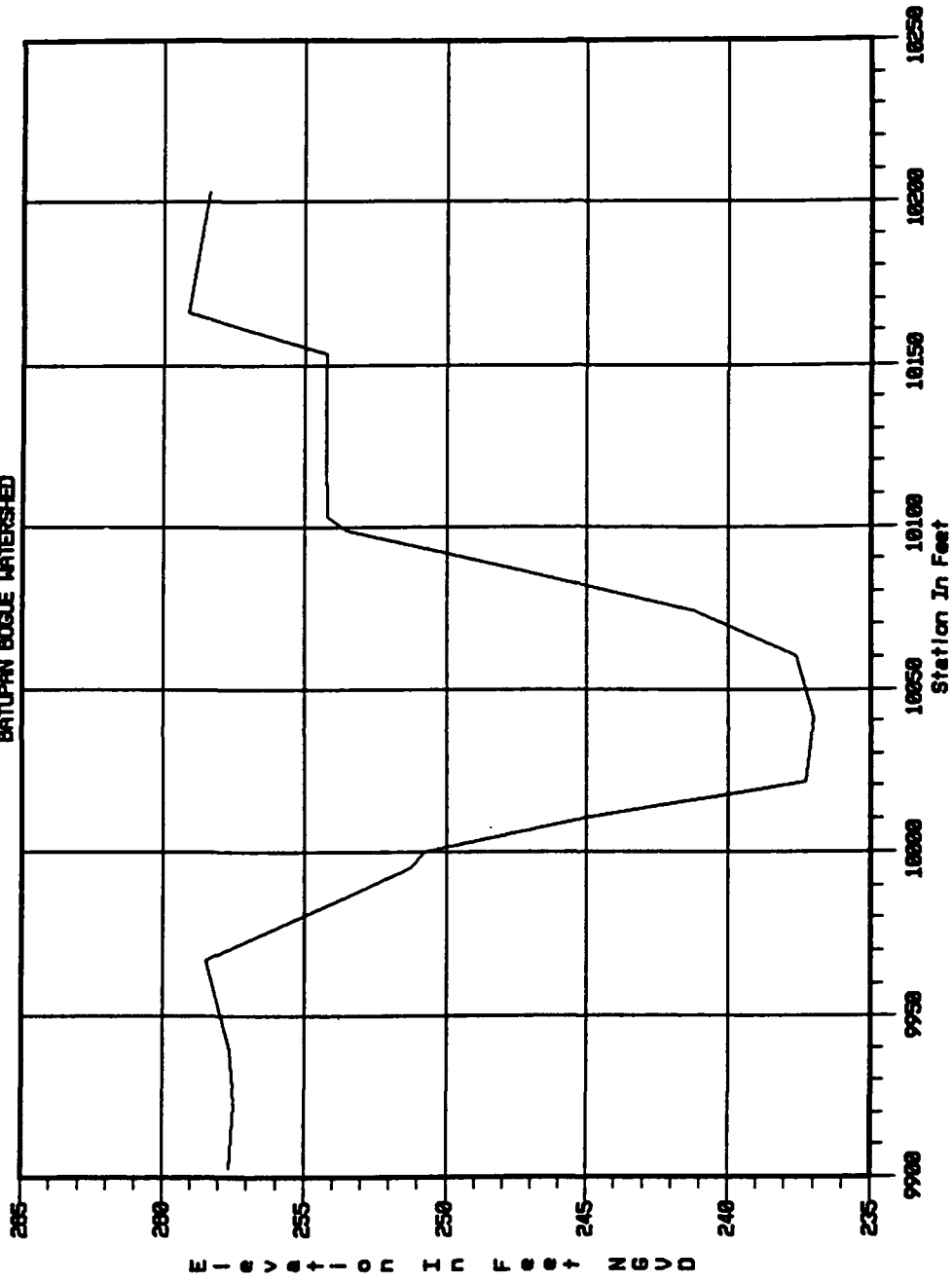


WOSHAW 1991 XSEC 51.98

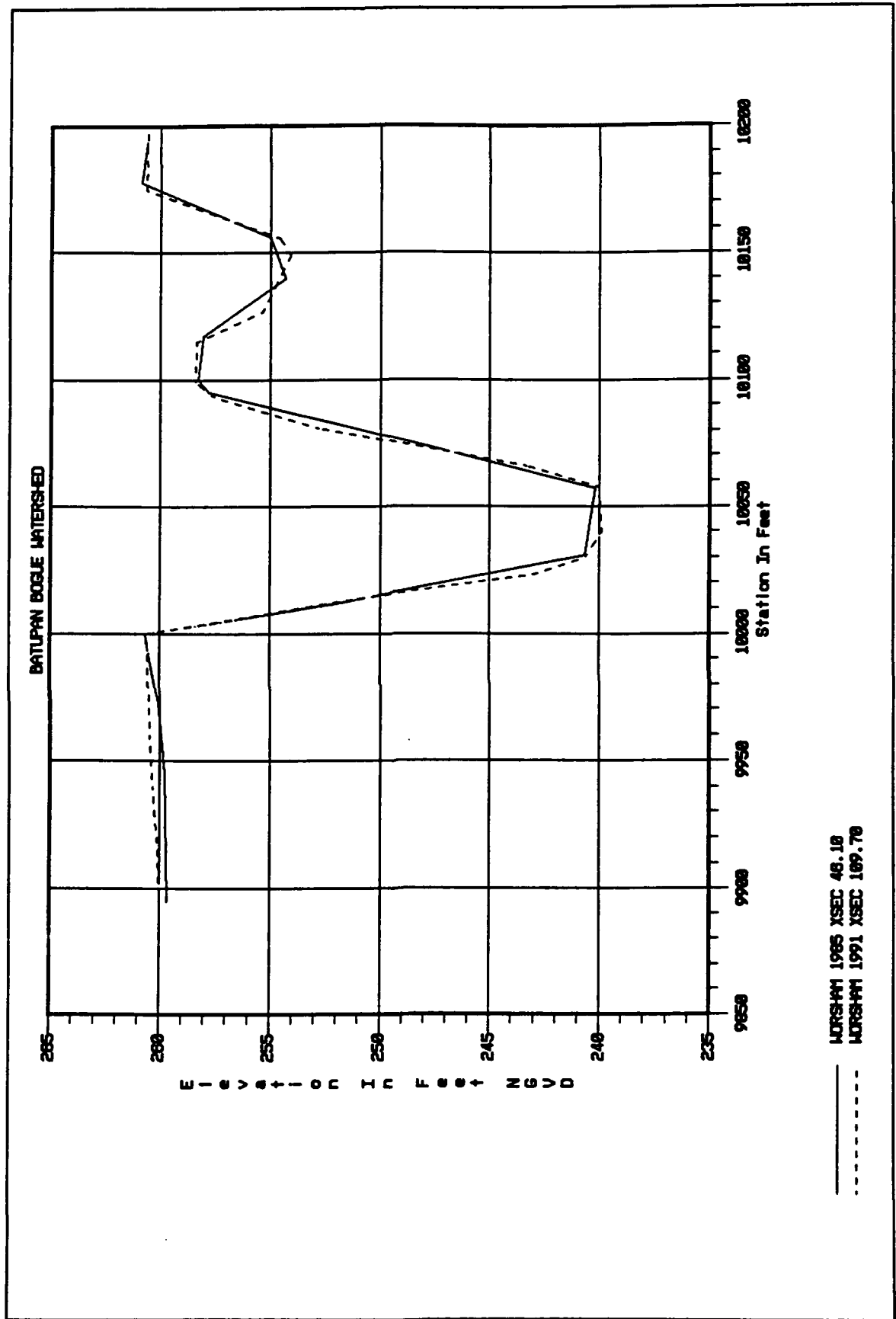


— 1985 XSEC 10.80
 - - - 1991 XSEC 74.40

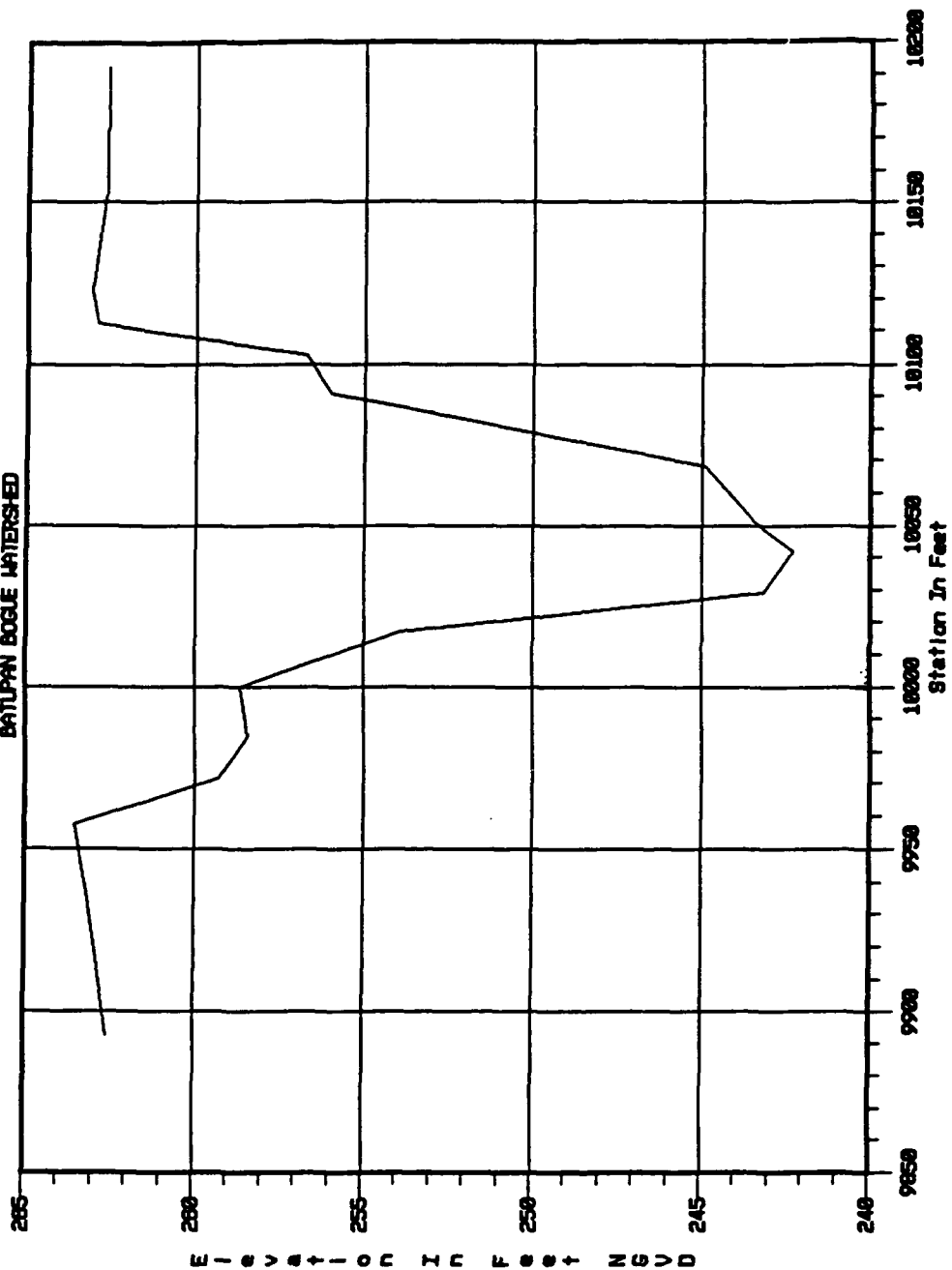
BATUPAN BOULE INTERSECT



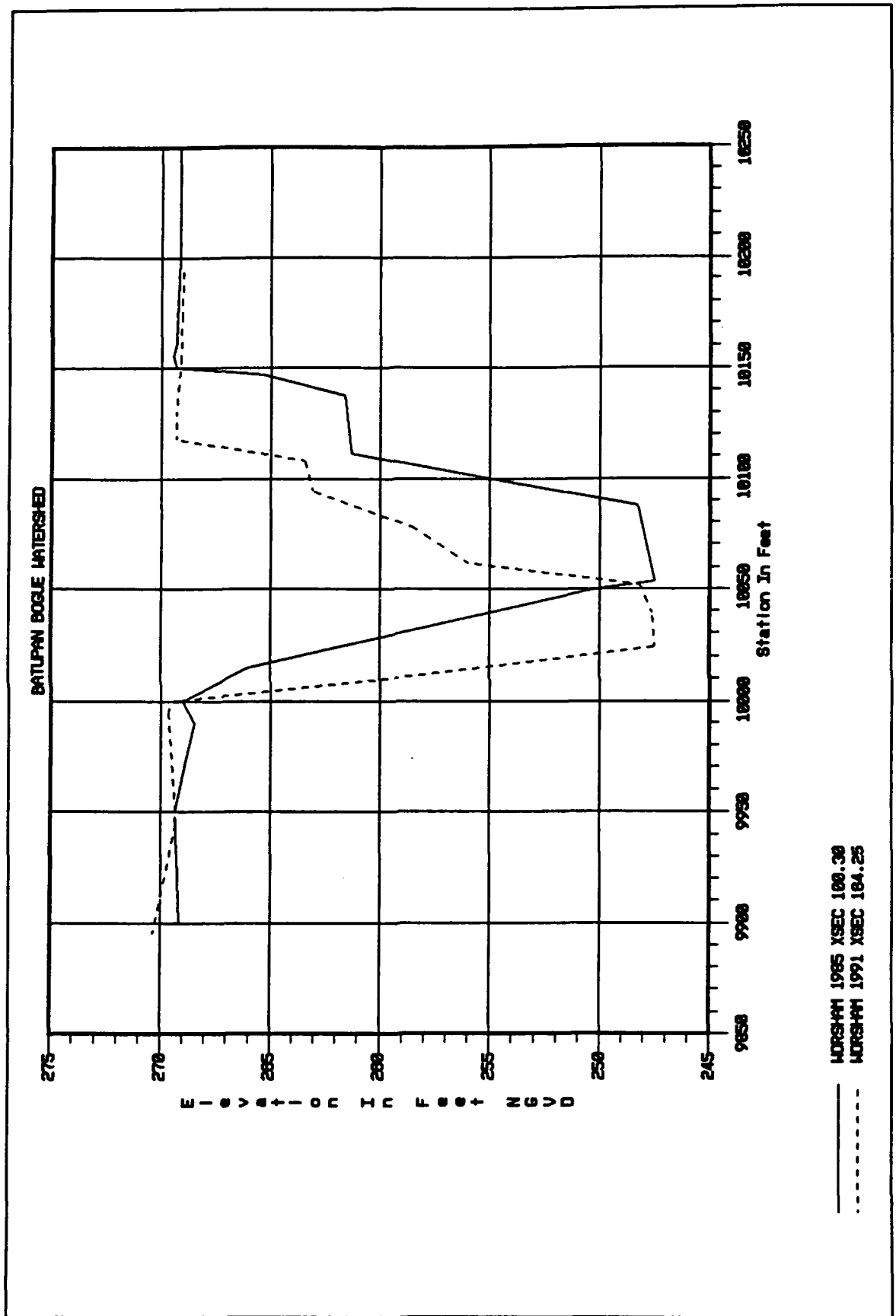
WORSHAM 1991 XSEC 91.55



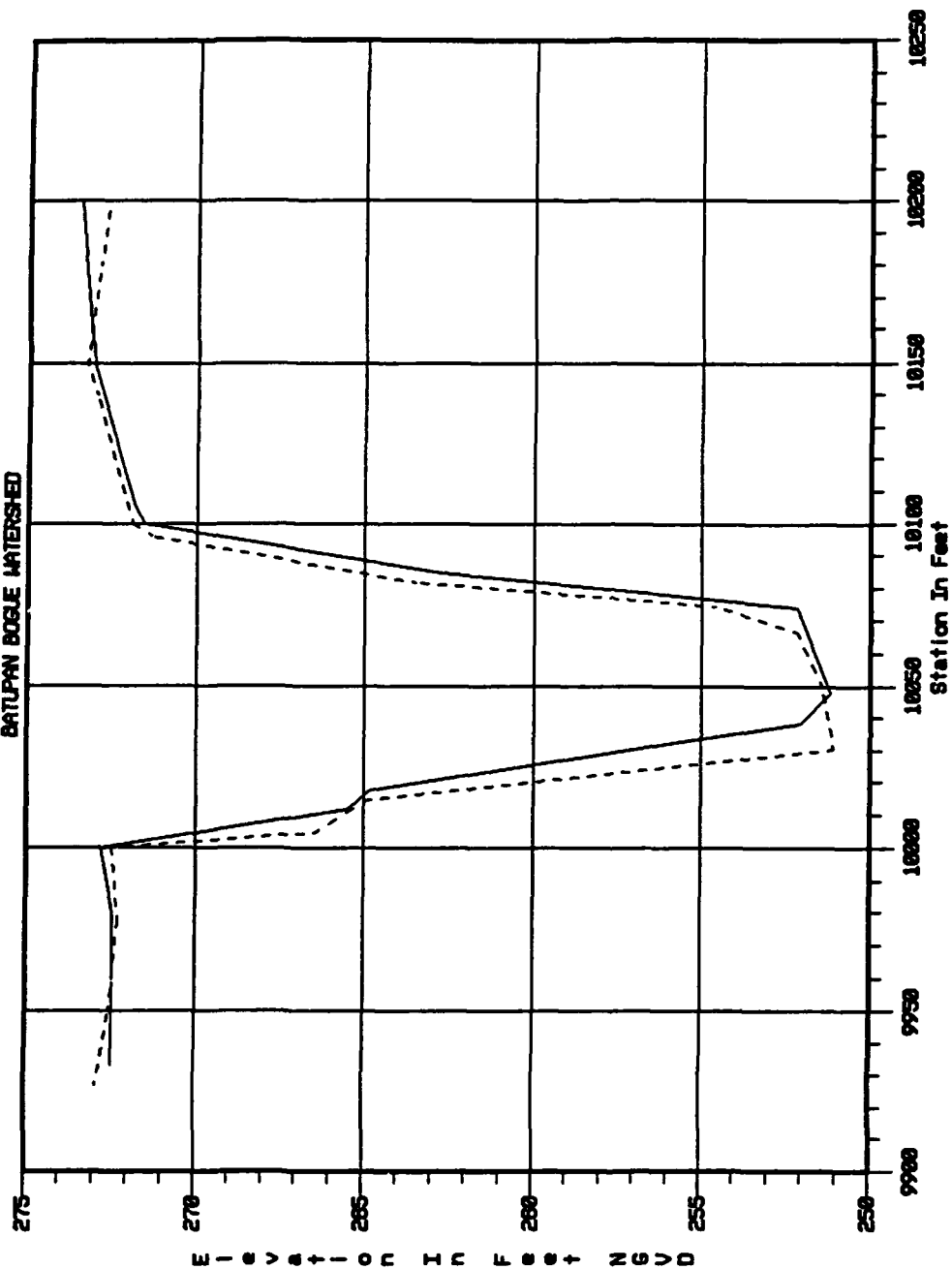
BATUPAN BOGLE WATERSHED



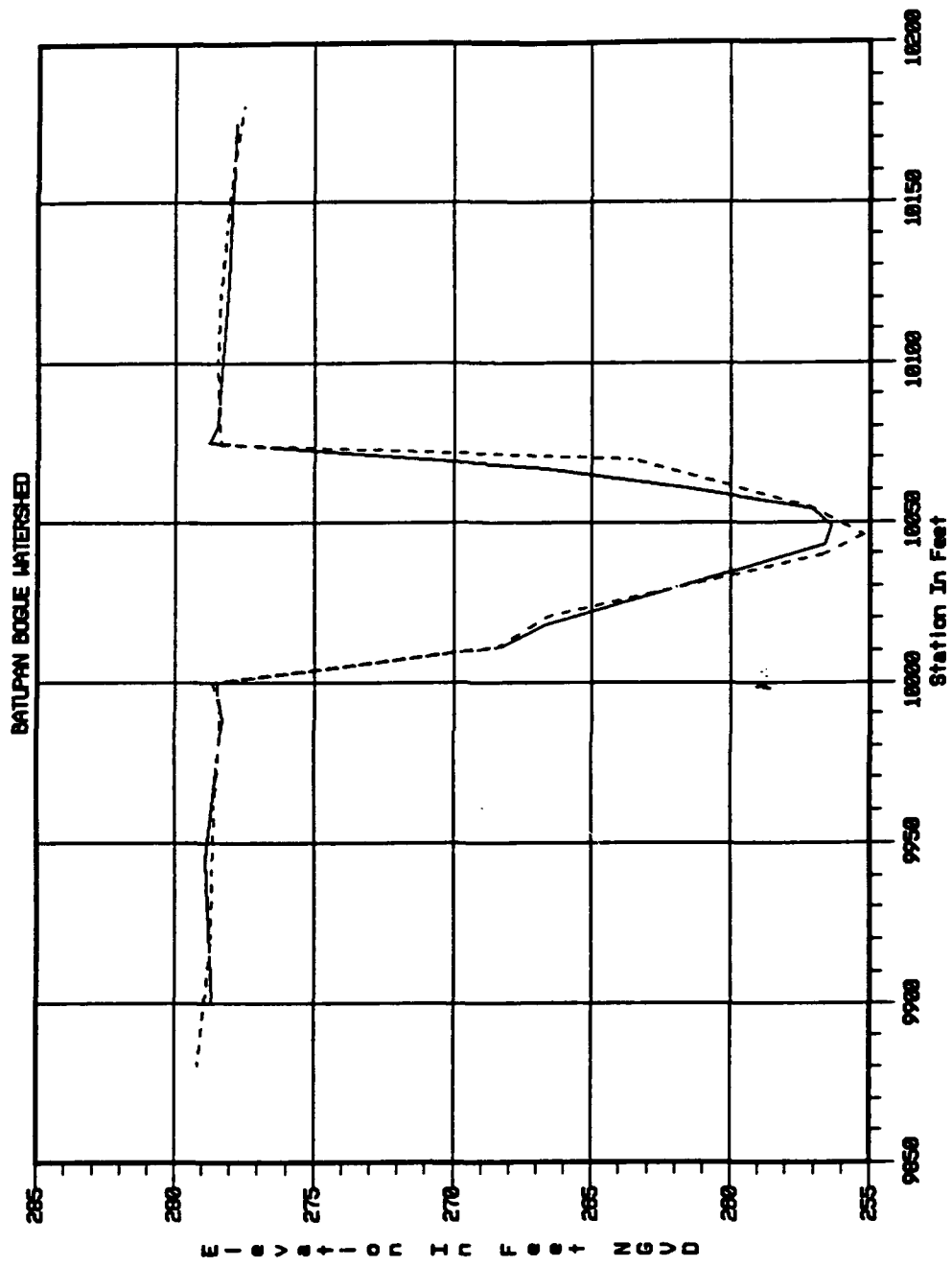
WRSWH 1991 XSEC 132.00



BATUPAN BOGLE WATERSHED

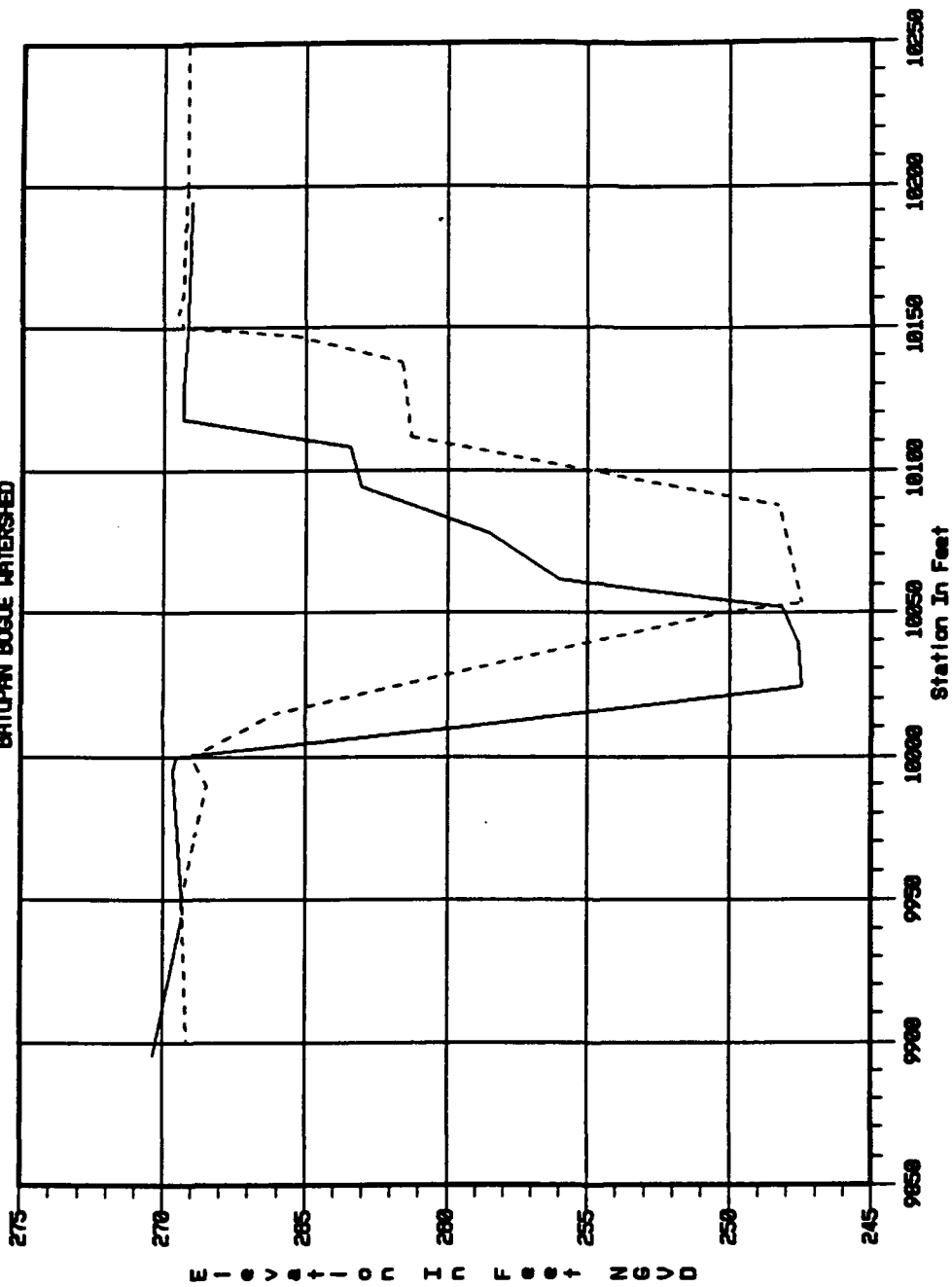


——— 1965 XSEC 128.00
 - - - 1991 XSEC 191.05

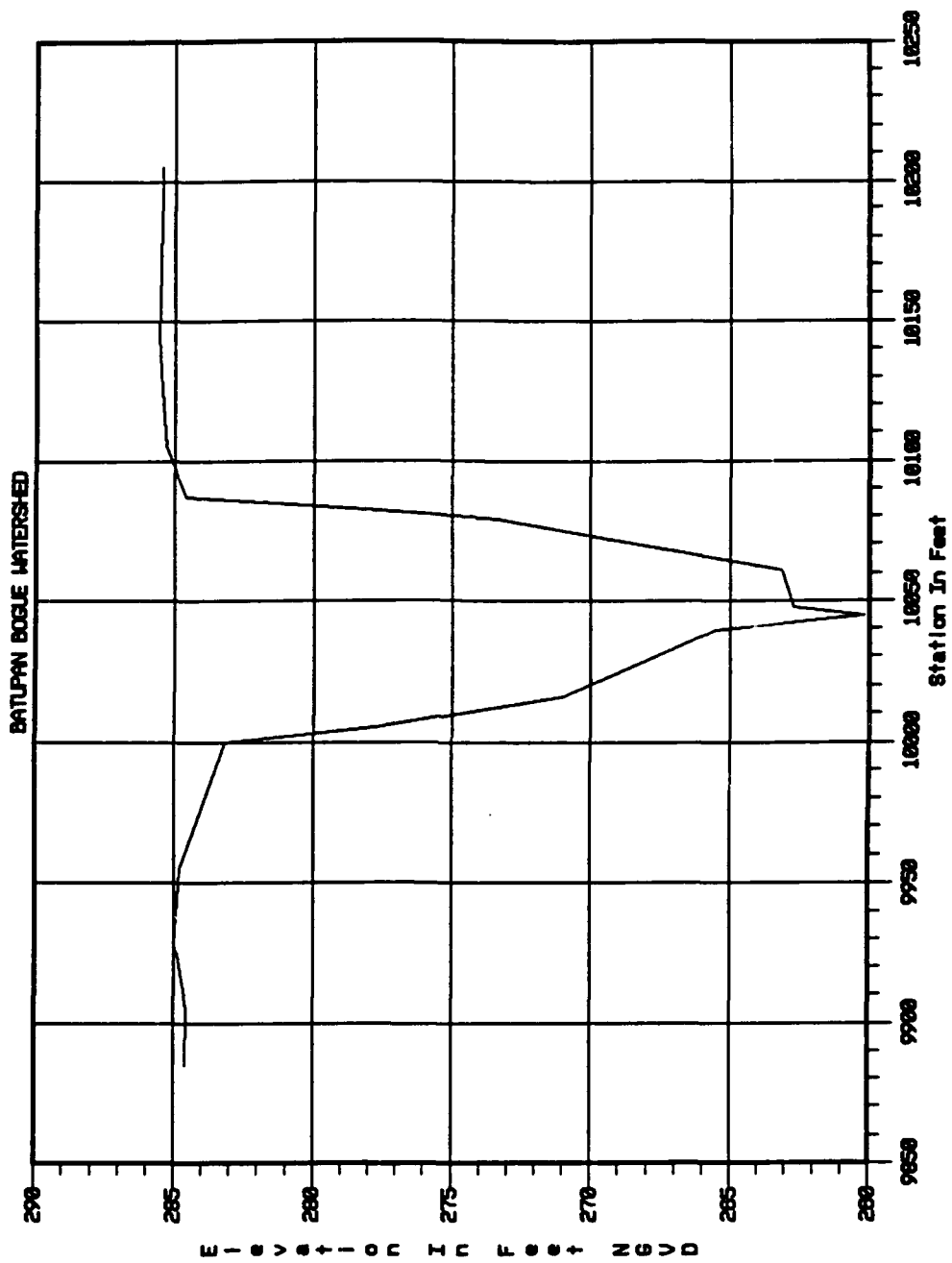


—— 1985 XSEC 155.75
- - - 1991 XSEC 218.00

BATUPAN BOGLE INTERSECT

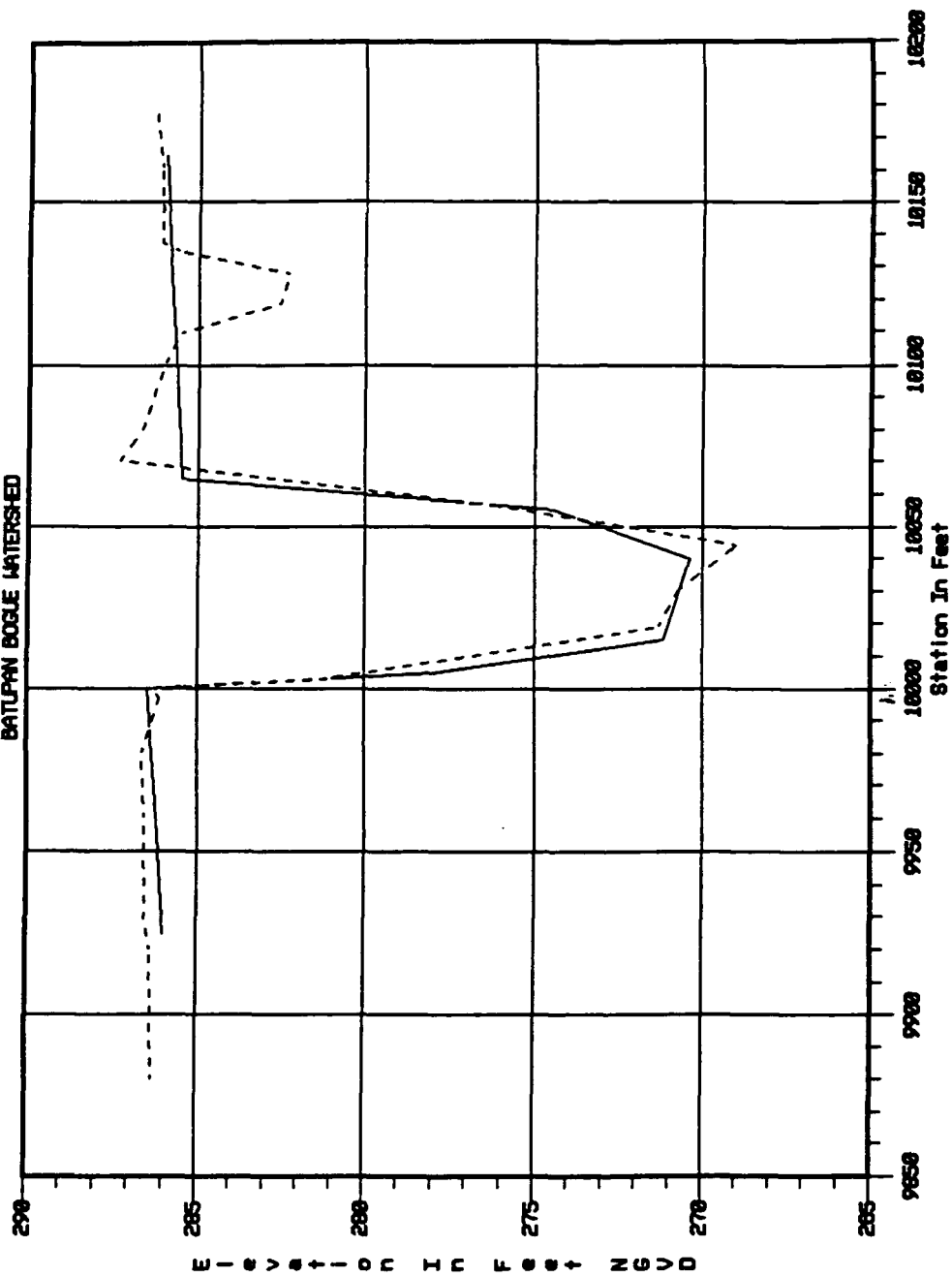


——— 1991 XSEC 104.25
 - - - 1985 XSEC 100.30

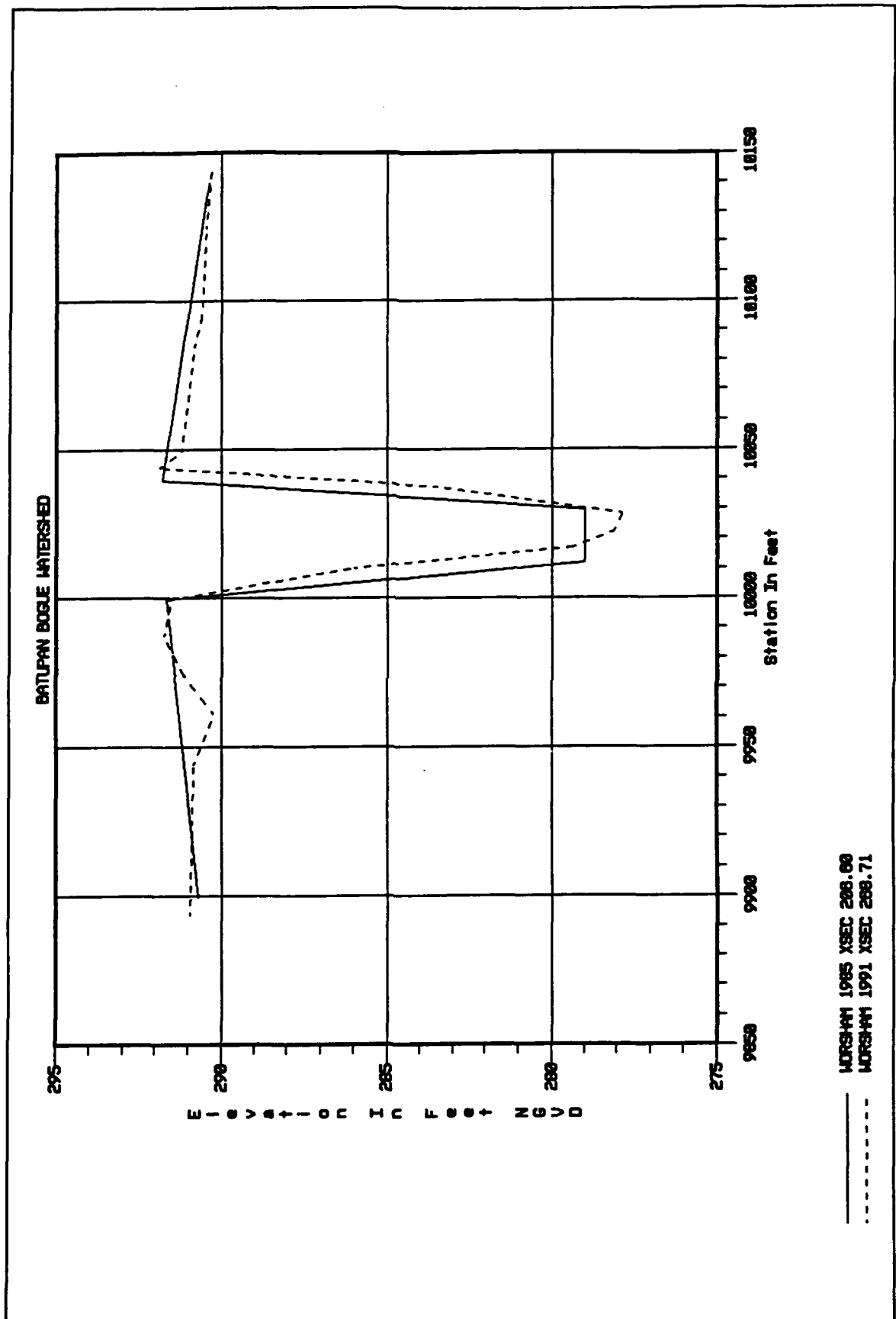


WDRSHW 1991 XSEC 244.35

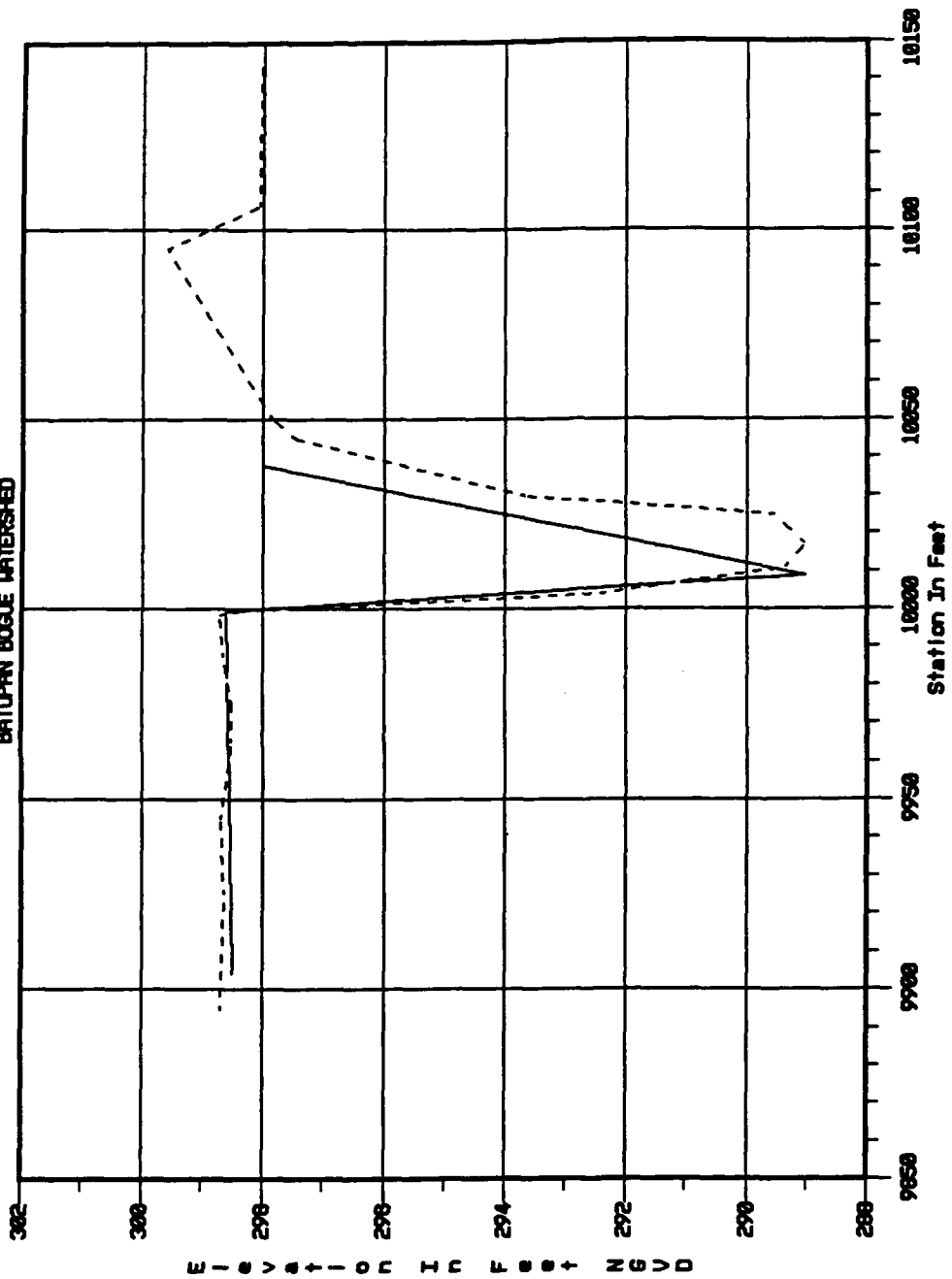
BATUPAN BOGLE WATERSHED



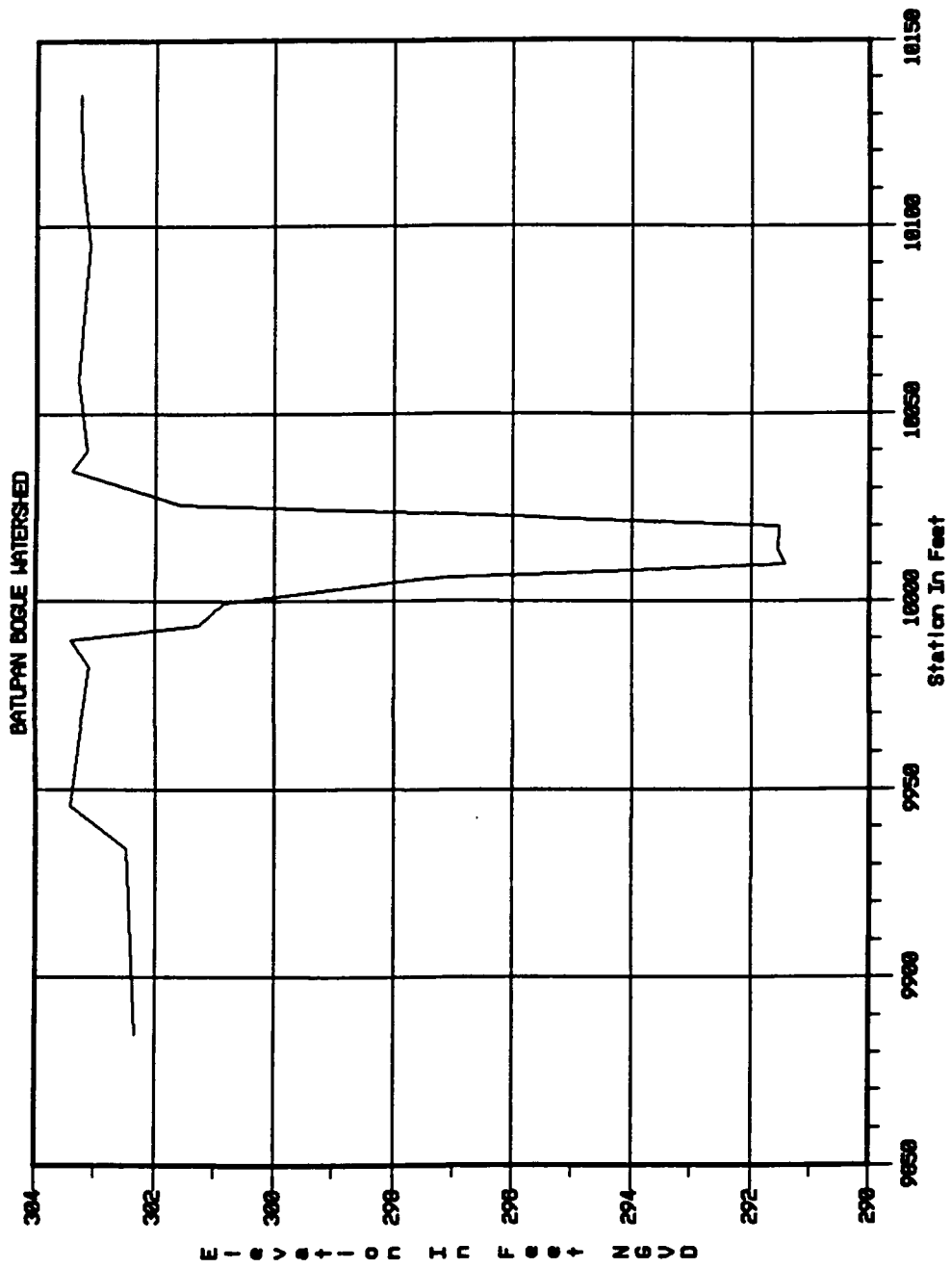
— 1985 XSEC 183.85
 - - 1991 XSEC 249.82



BATUPAN BOGLE WATERSHED

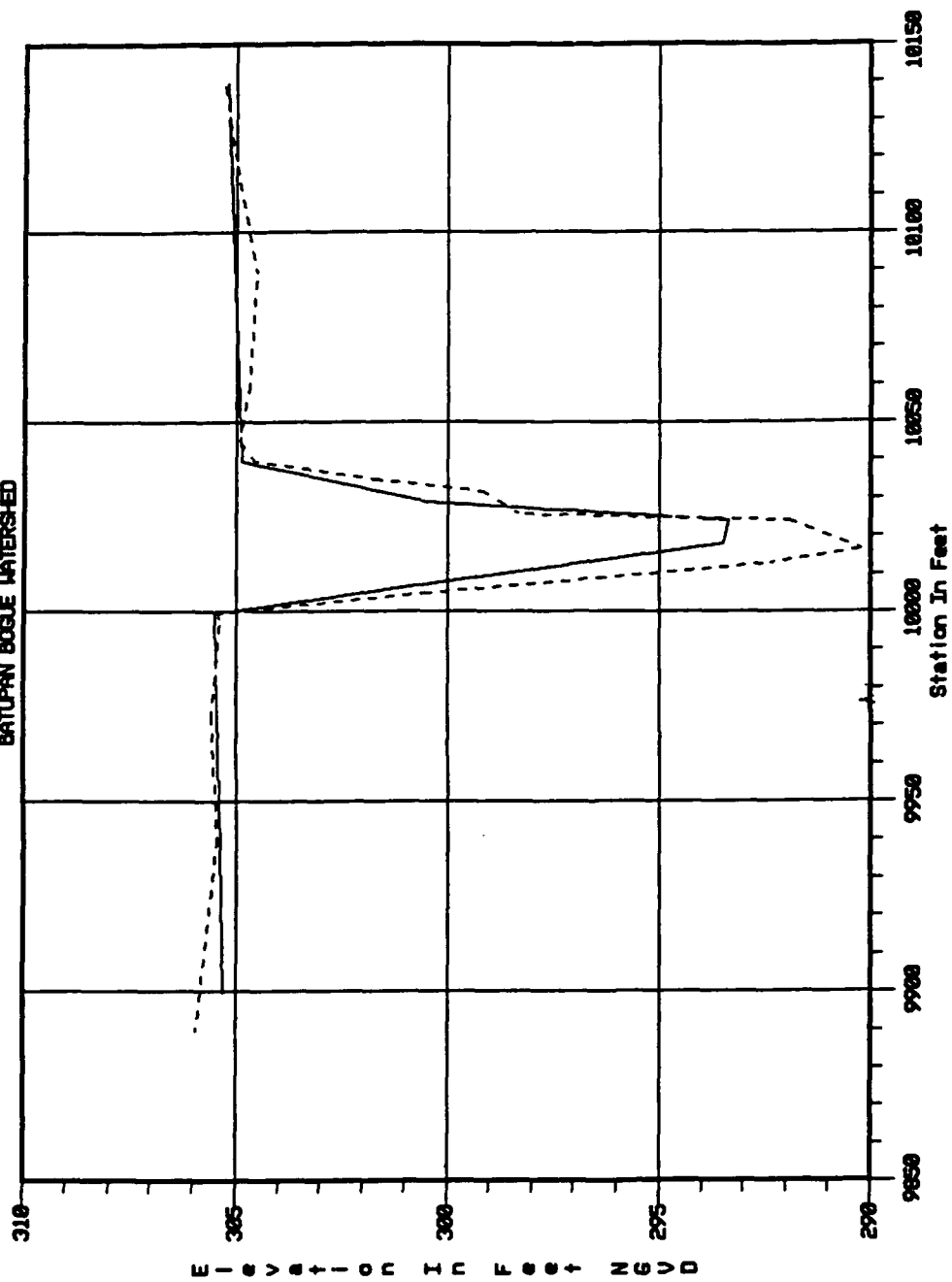


— 1985 XSEC 231.78
 - - - 1991 XSEC 293.75



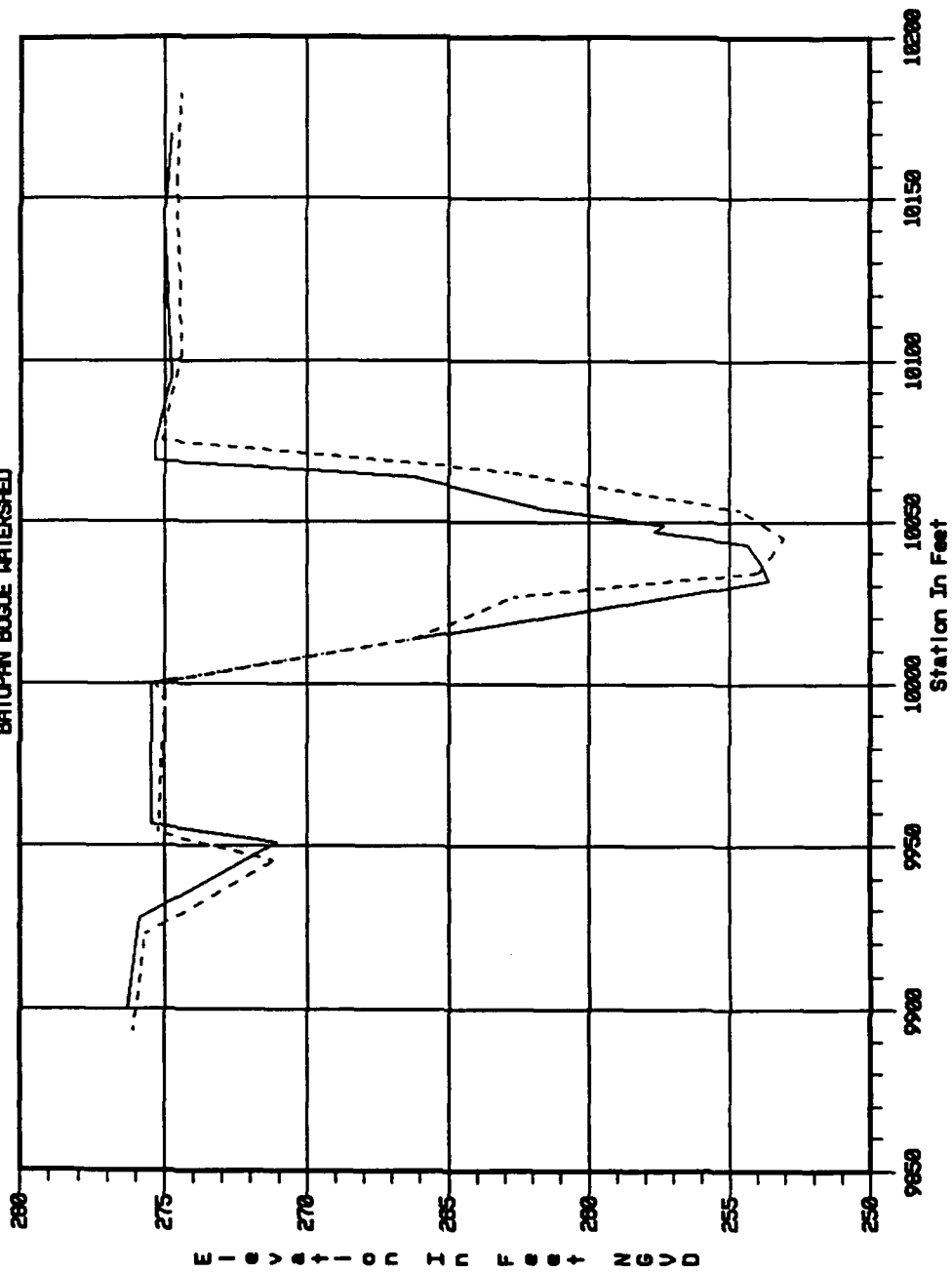
—— MORSHAM 1991 XSEC 308.00

BATUPAN BOGUE WATERSHED



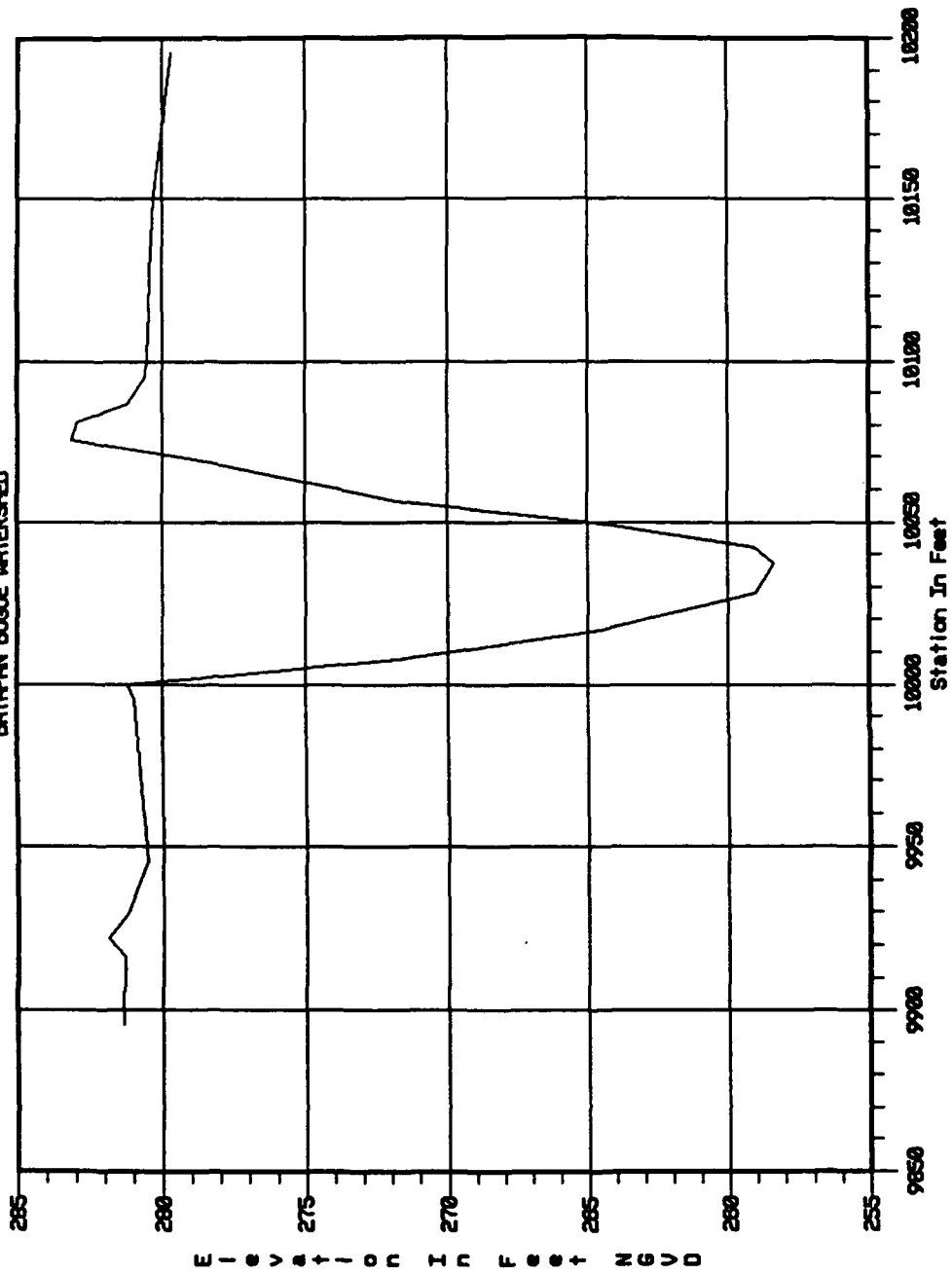
— 1985 XSEC 253.15
 - - - 1991 XSEC 314.70

BATUPAN BOGLE WATERSHED

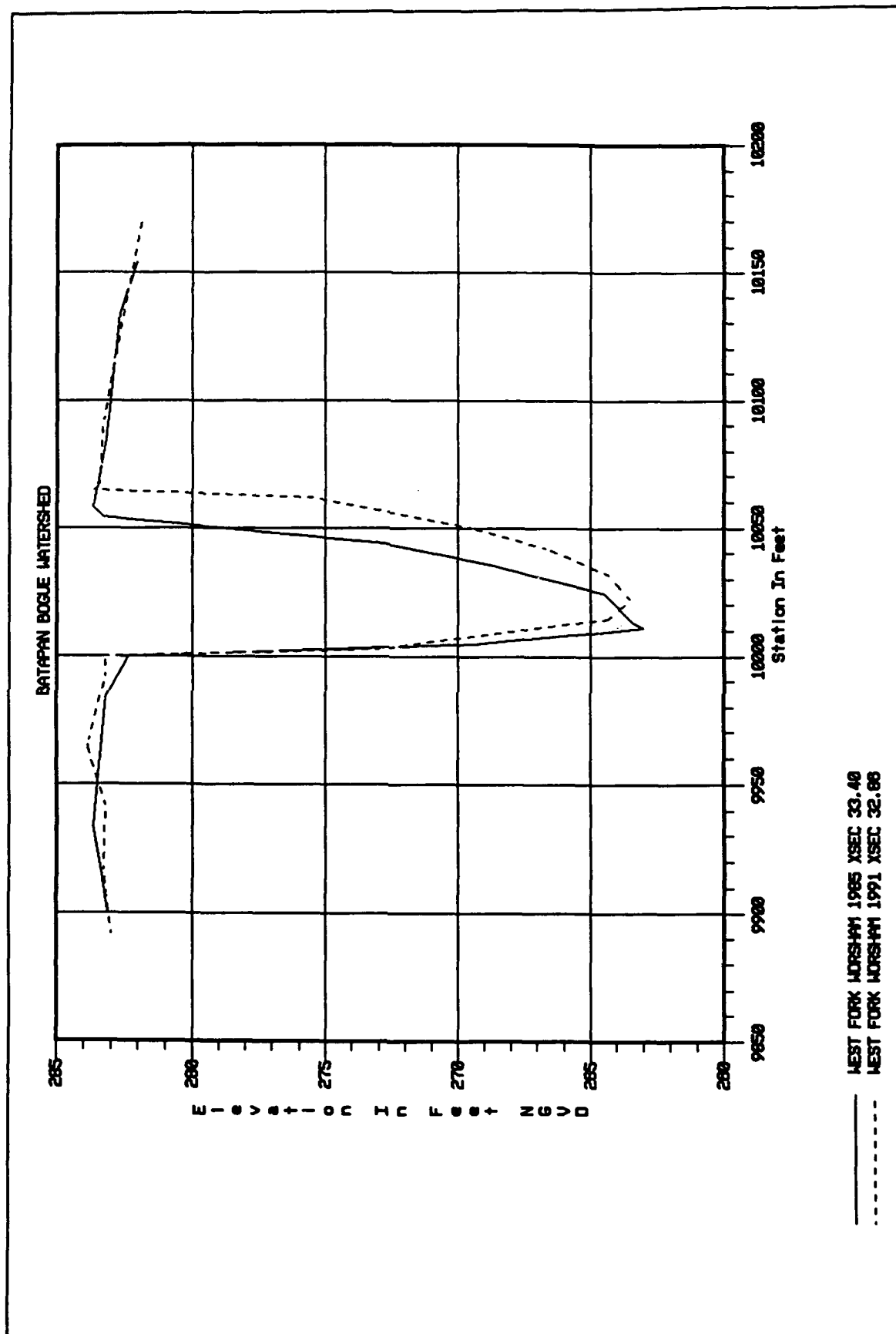


WEST FORK MORSHAM 1985 XSEC 8.30
WEST FORK MORSHAM 1991 XSEC 8.30

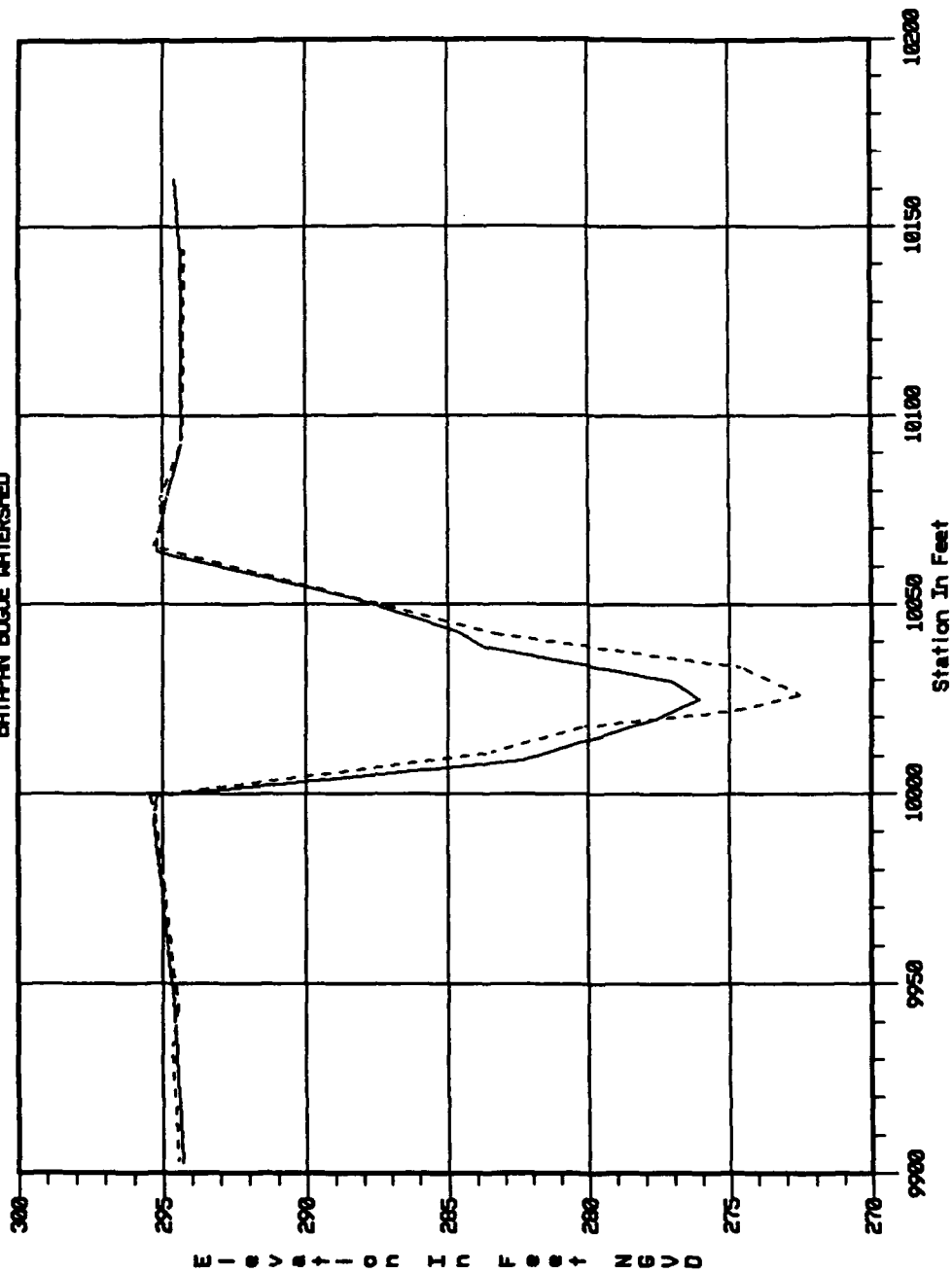
BATAFN BOGJE WATERSHED



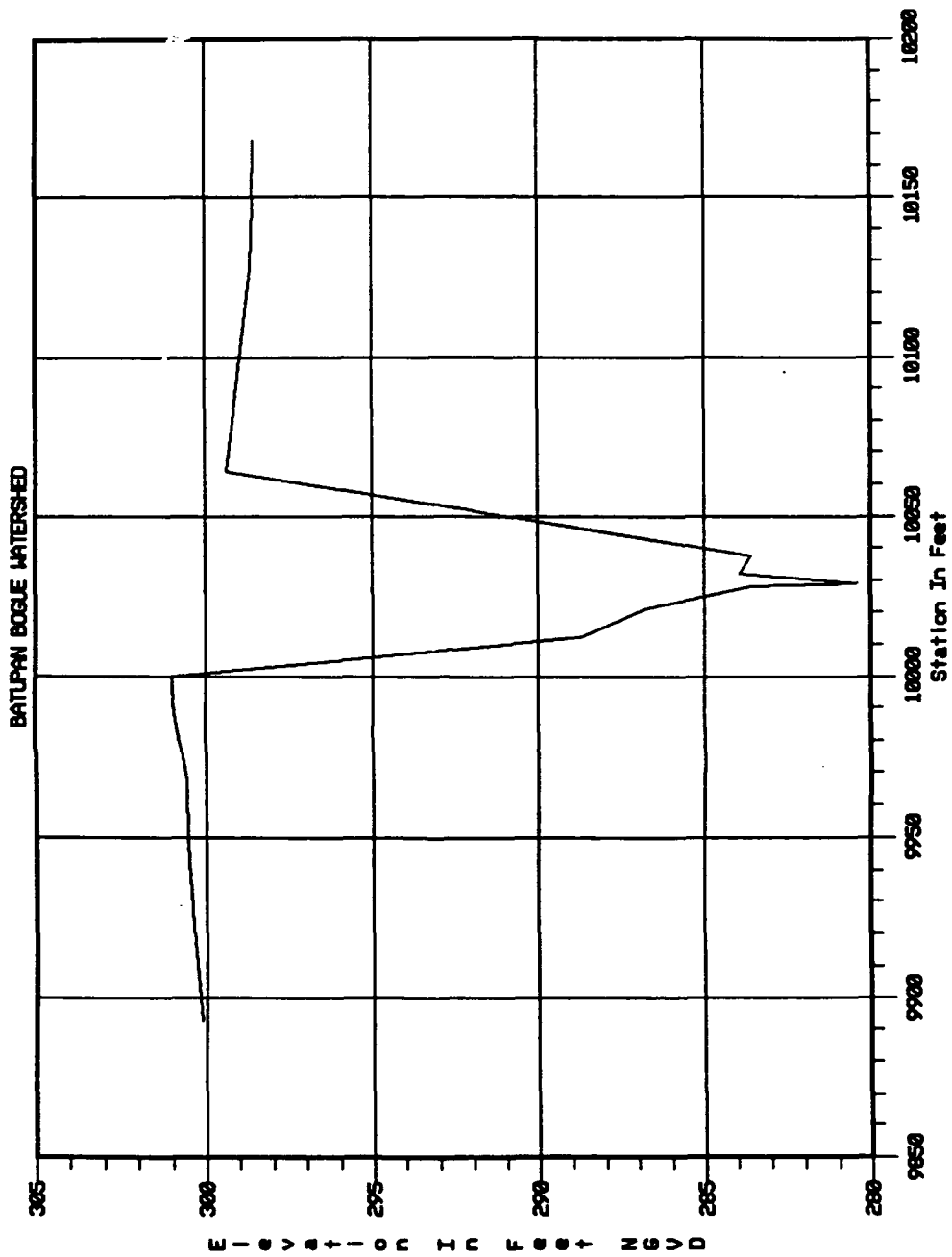
WEST FORK WORSHAM 1991 XSEC 25.55



BATAVAN BOGUE WATERSHED

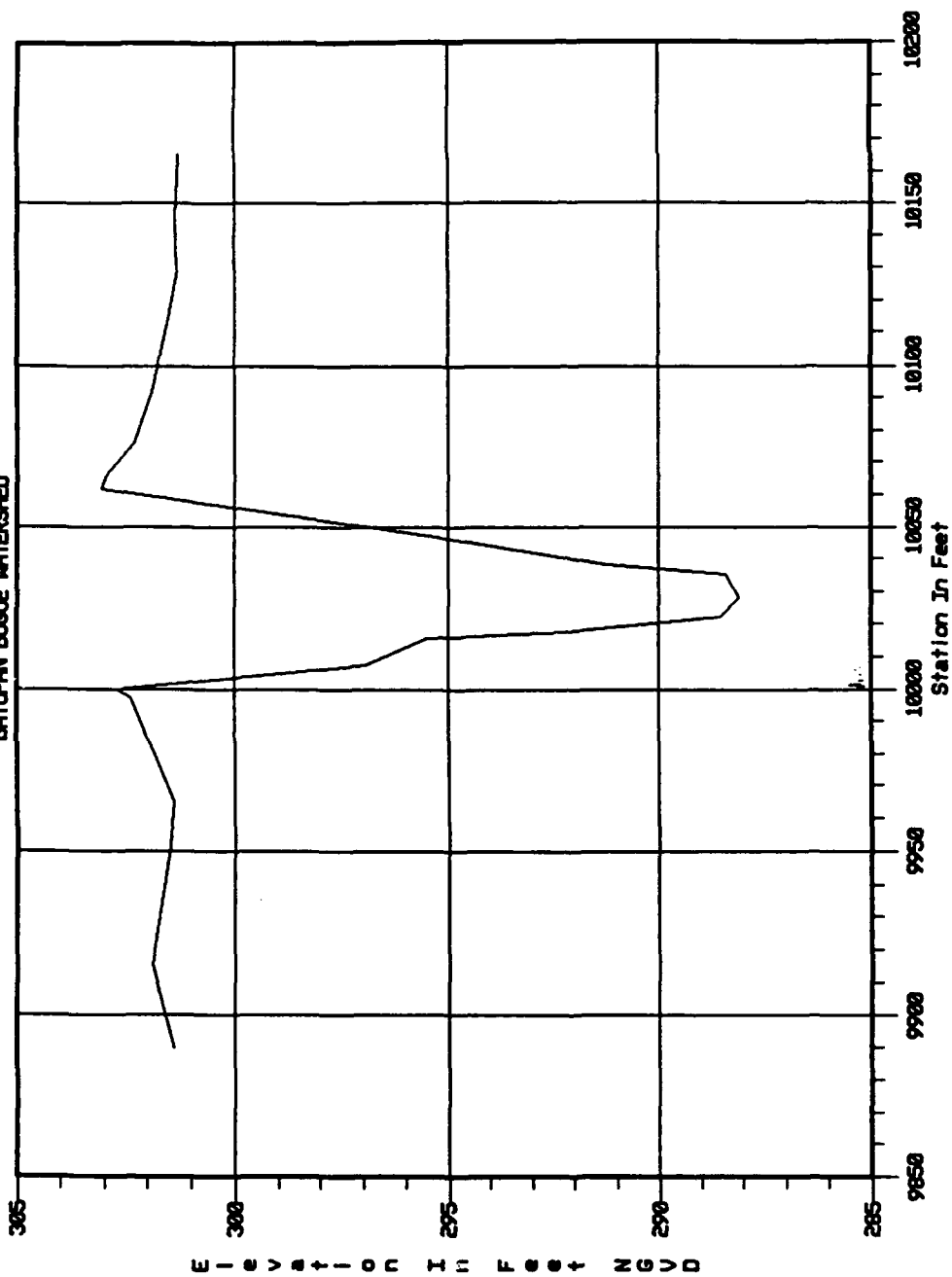


— WEST FORK WORSHAM 1985 XSEC 67.64
 - - - WEST FORK WORSHAM 1991 XSEC 66.20



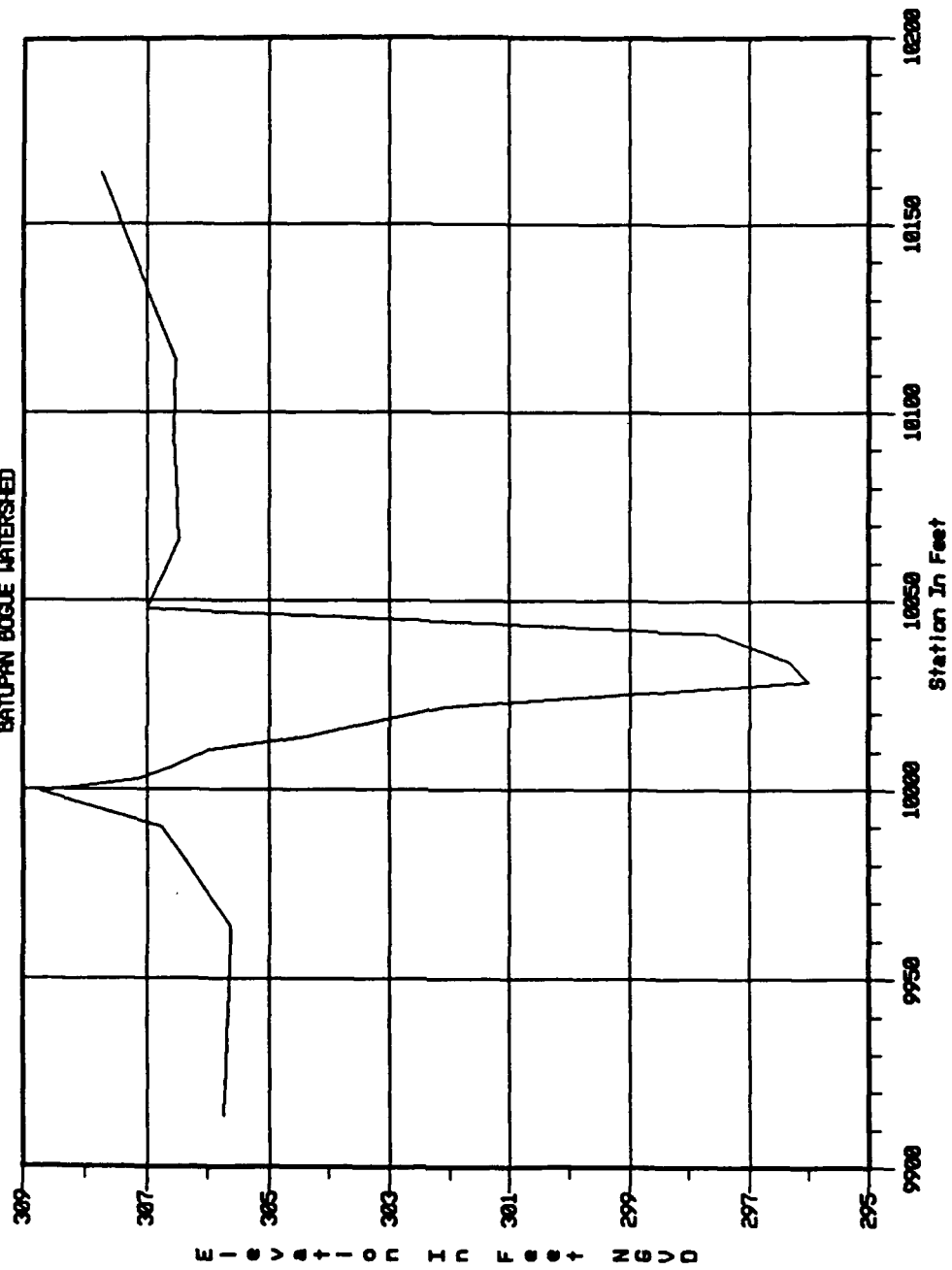
WEST FORK WORSWAM 1991 XSEC 80.75

BATUPAN BOGLE WATERSHED



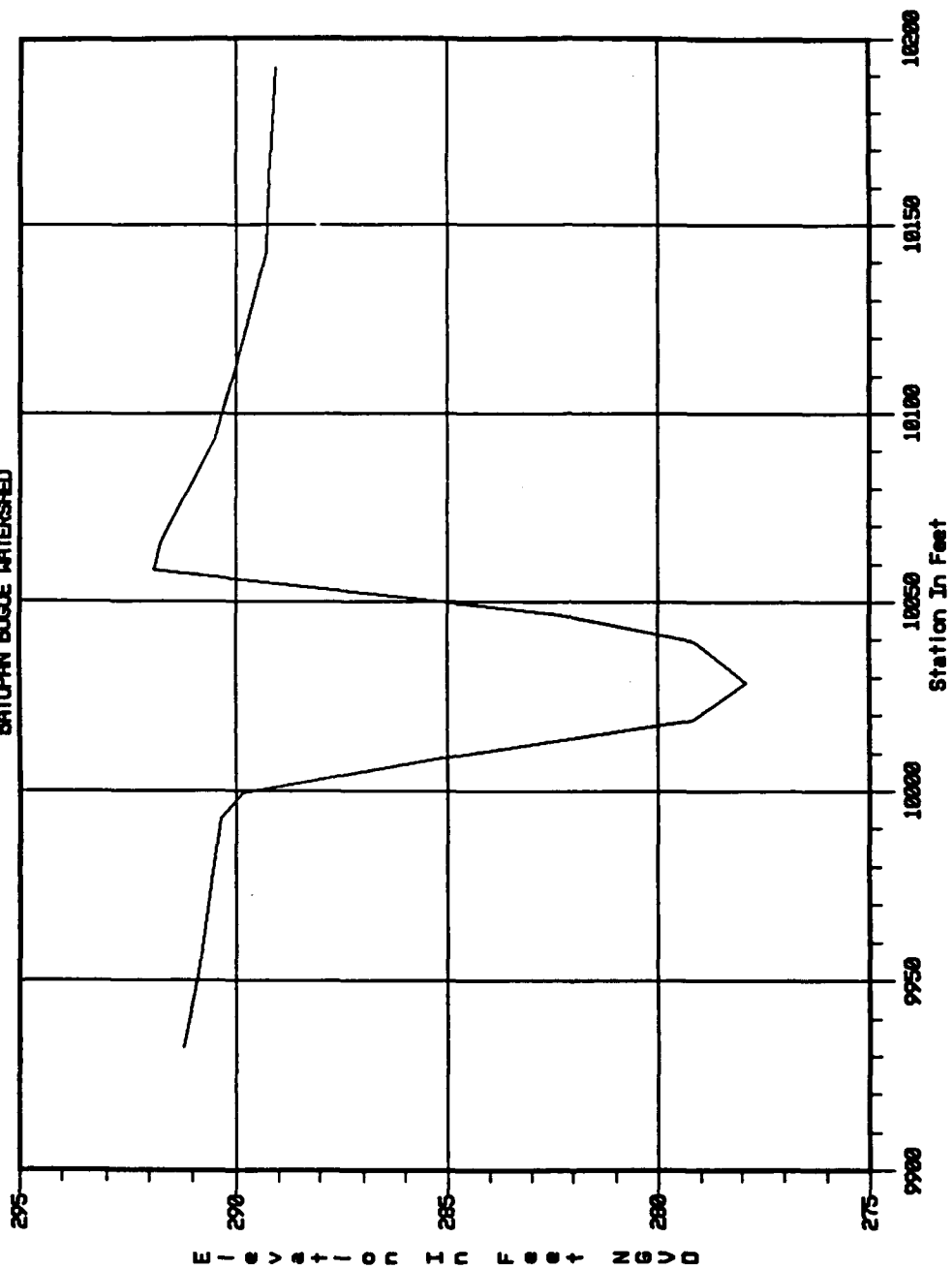
— WEST FORK WORSHAM 1991 XSEC 85.55

BATUPAN BOGUE WATERSHED



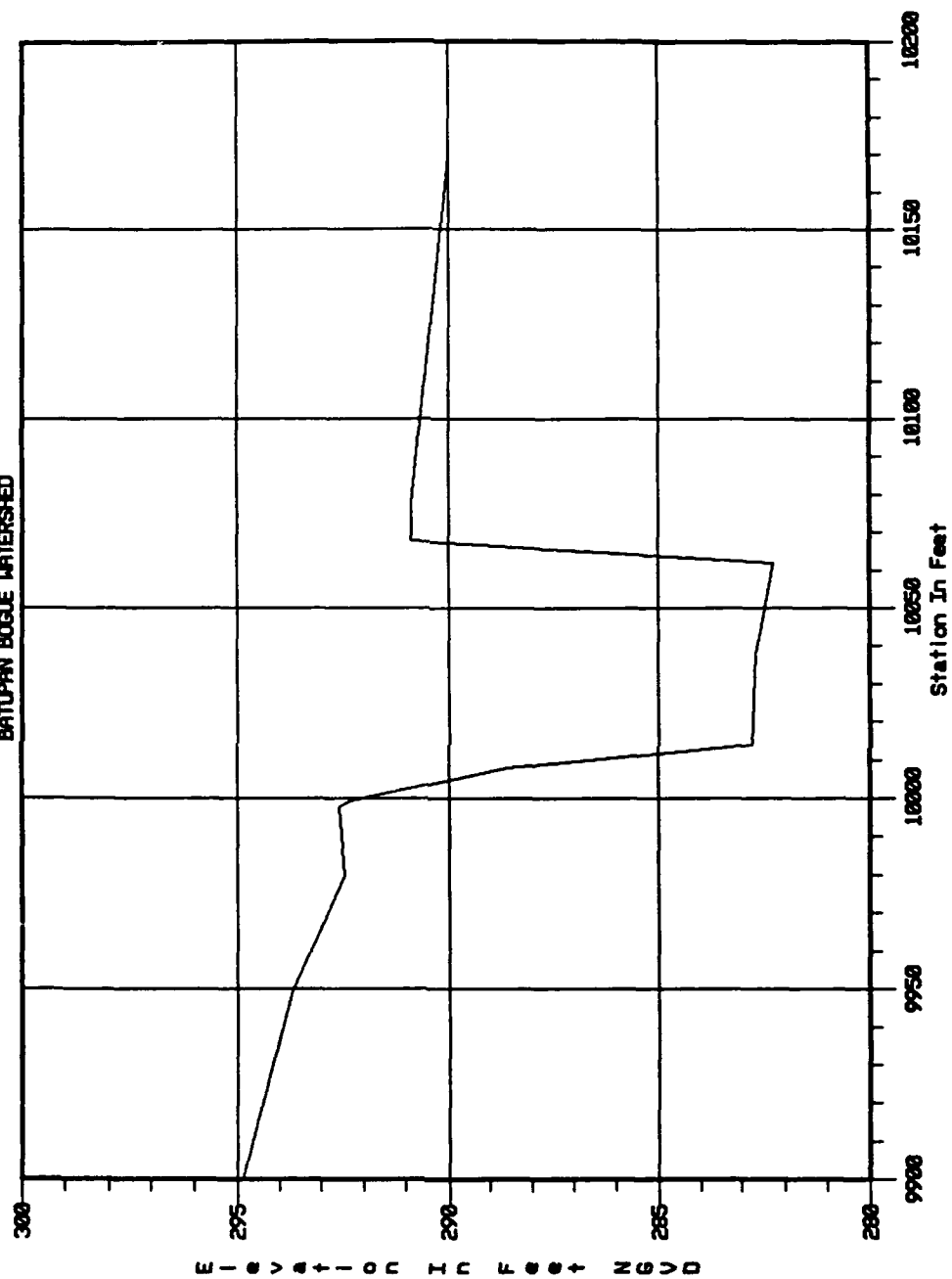
WEST FORK WATERSHED 1991 XSEC 97.24

SATUPAN BOGUE WATERSHED



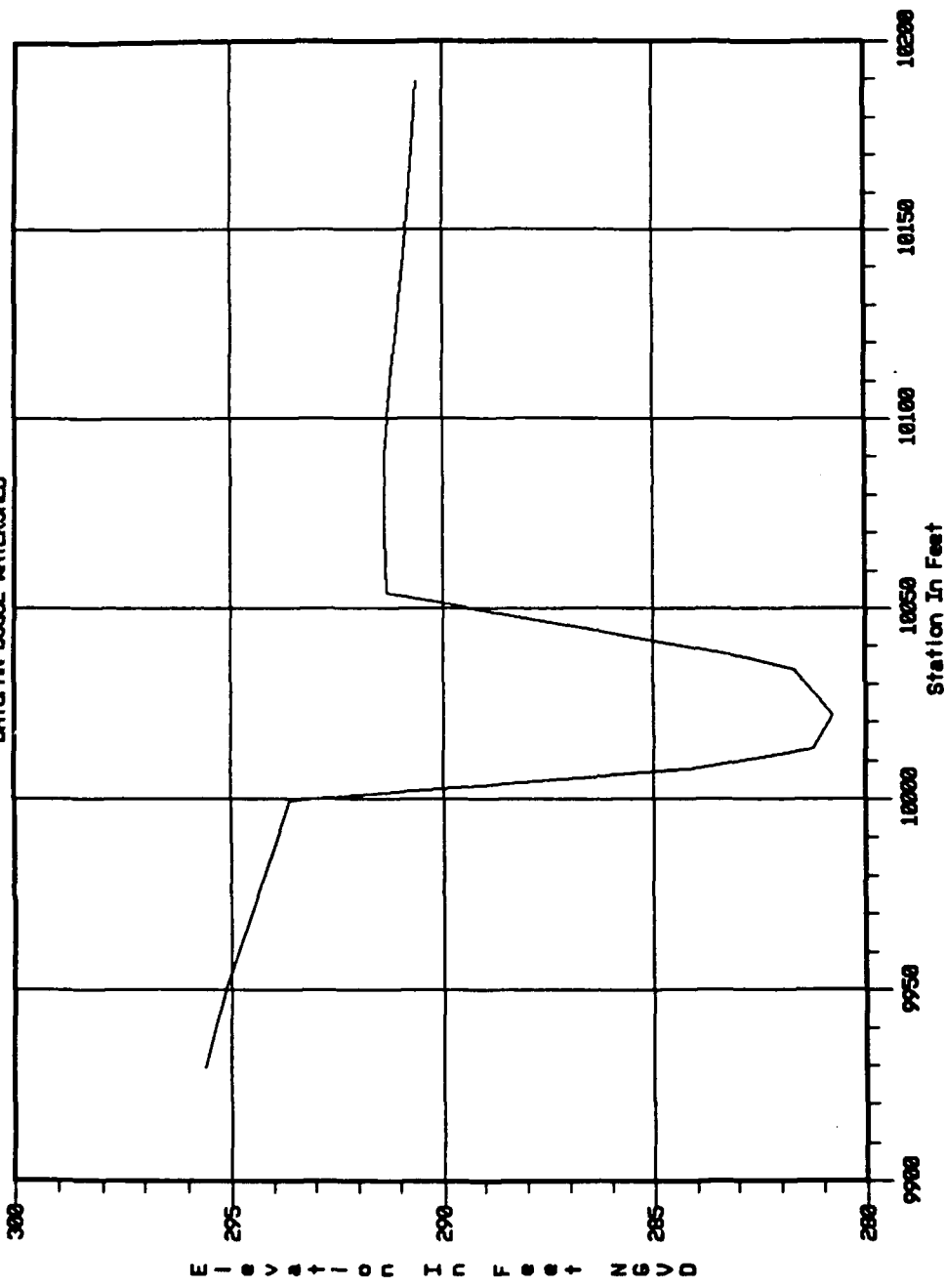
— EAST FORK WATERSHED 1991 XSEC R 13.57

BATUPAN BOGUE WATERSHED

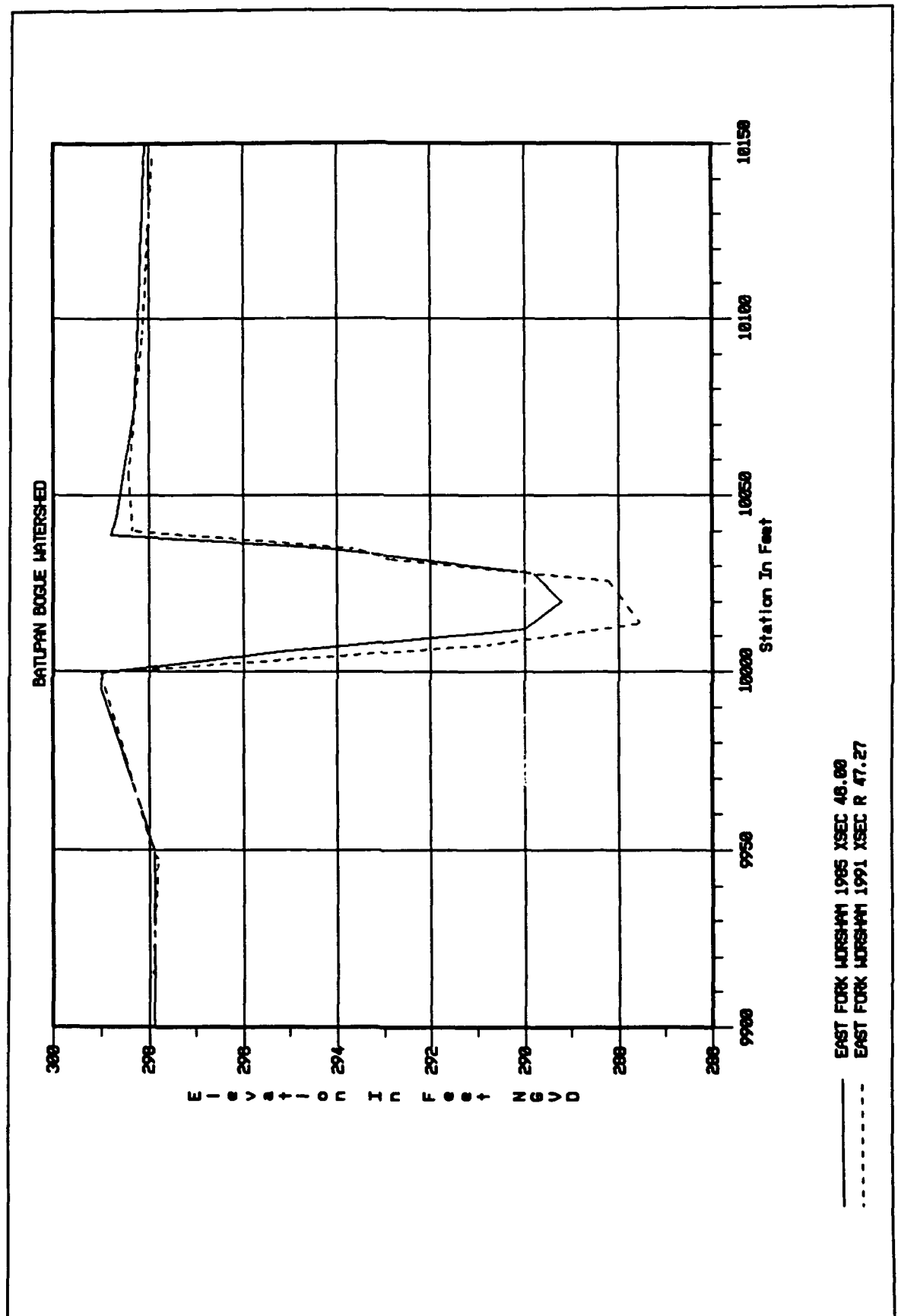


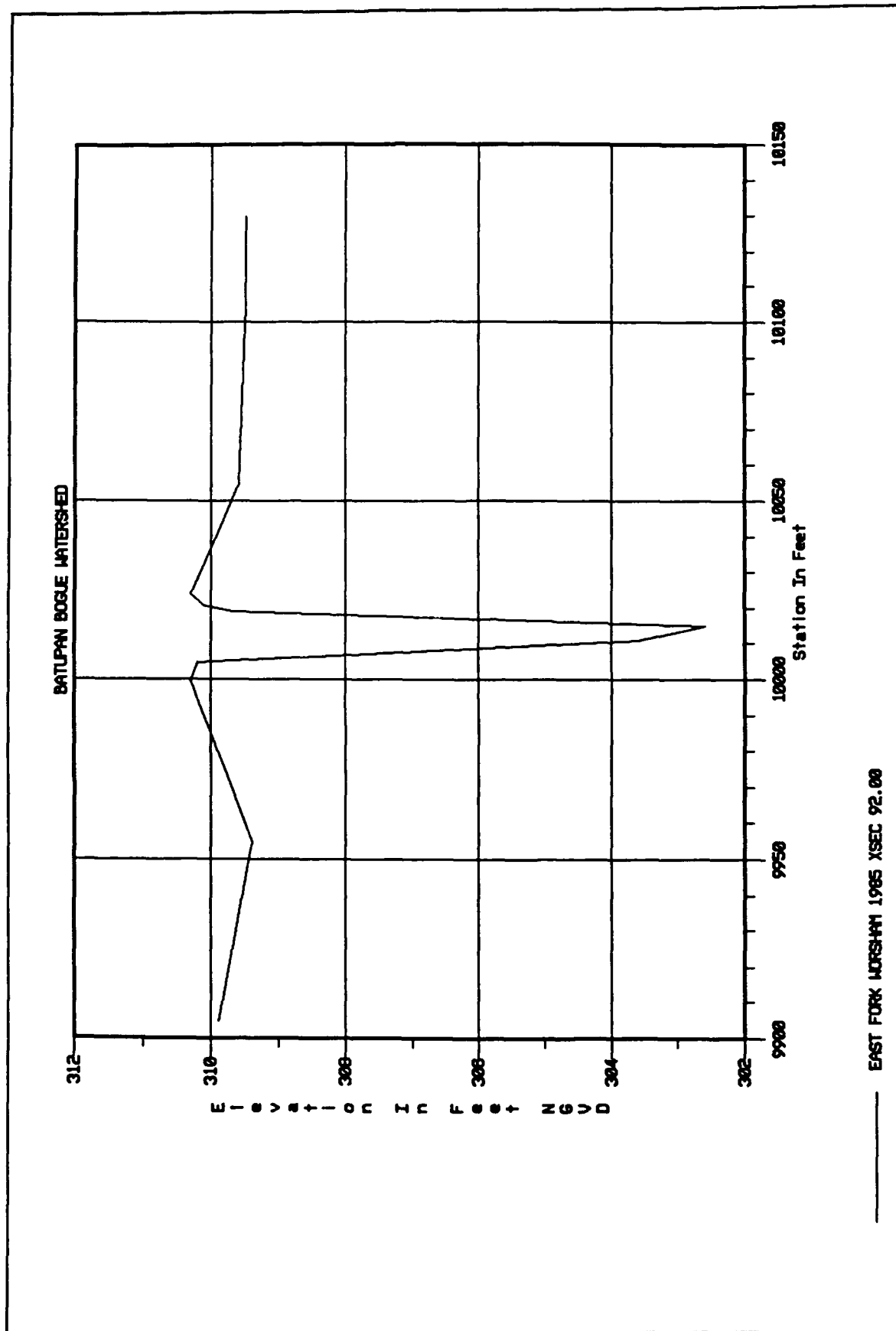
— EAST FORK MORSHAM 1985 XSEC 15.30

BATUPAN BOGLE WATERSHED

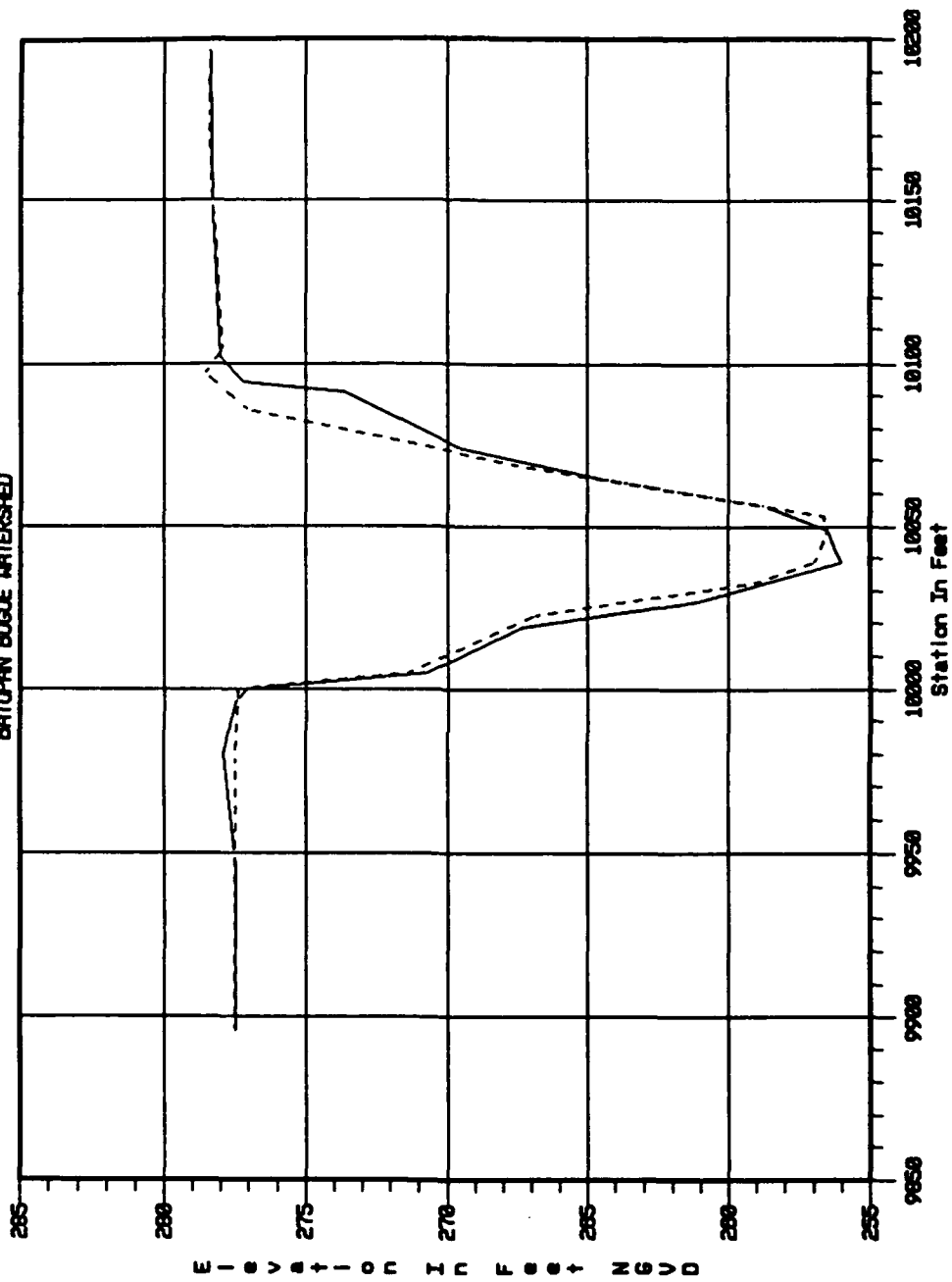


— EAST FORK WOSHAW 1991 XSEC R 15.95



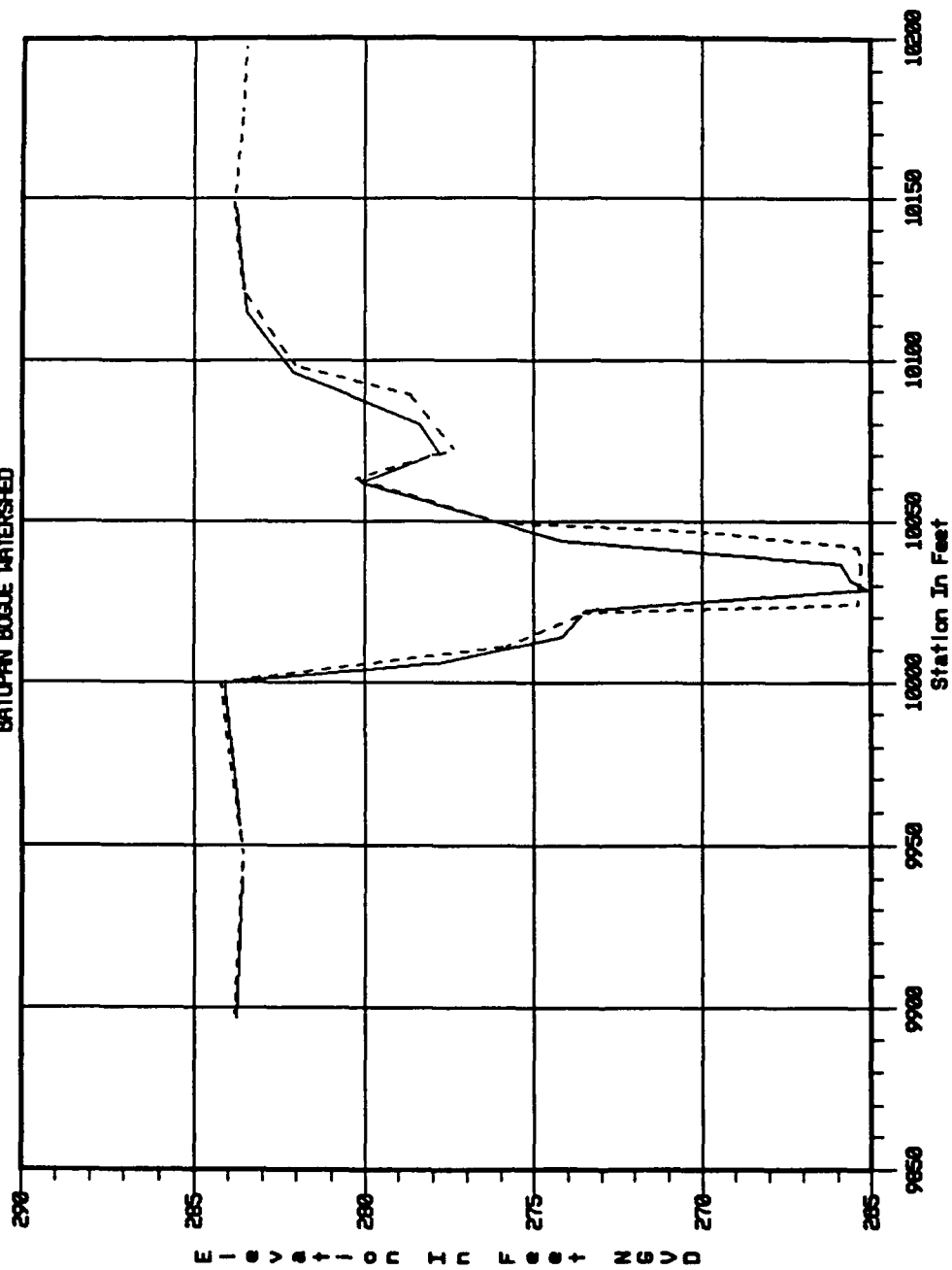


BATUPAN BOGLE WATERSHED

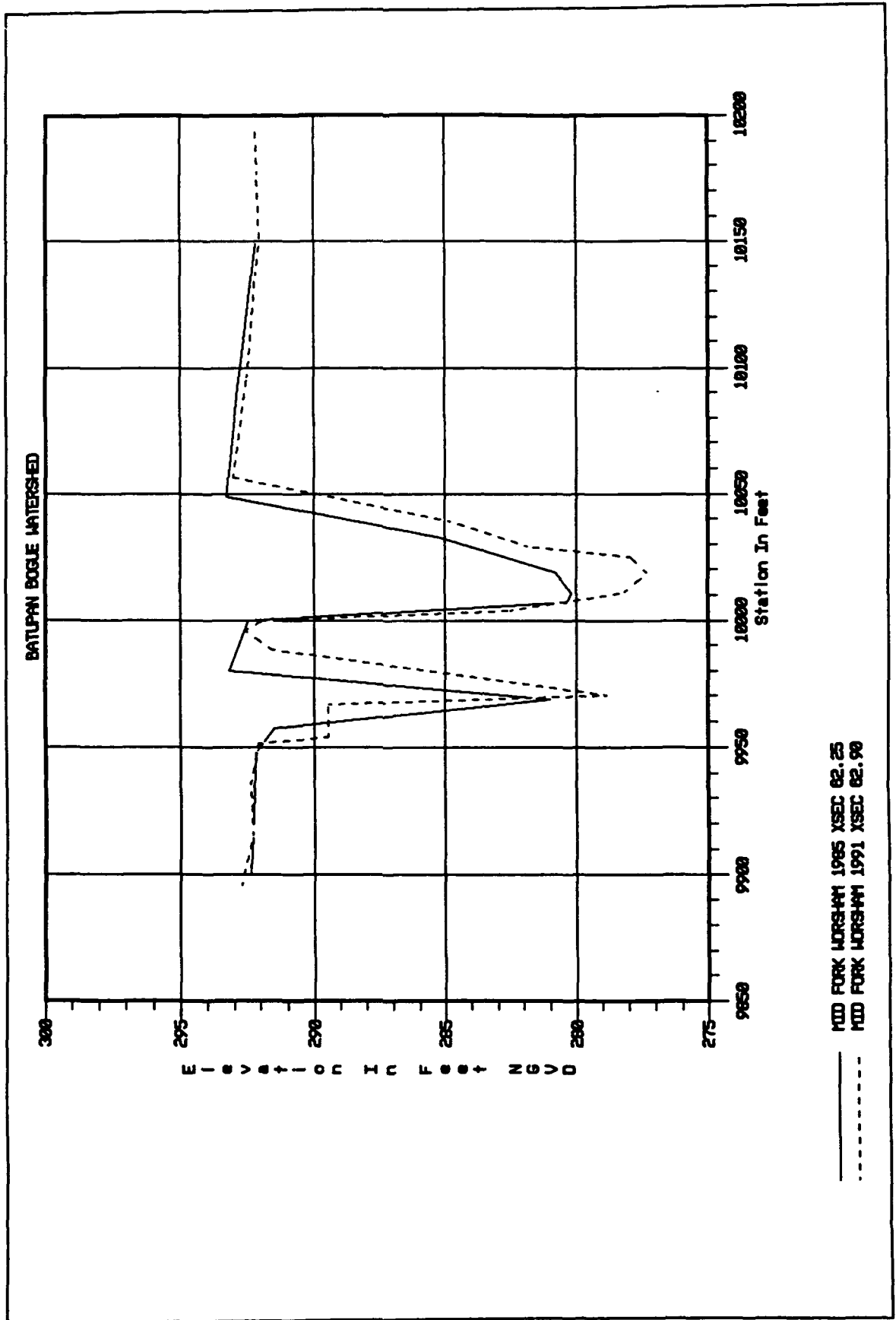


— 1985 XSEC 5.43
 - - - 1991 XSEC 5.29

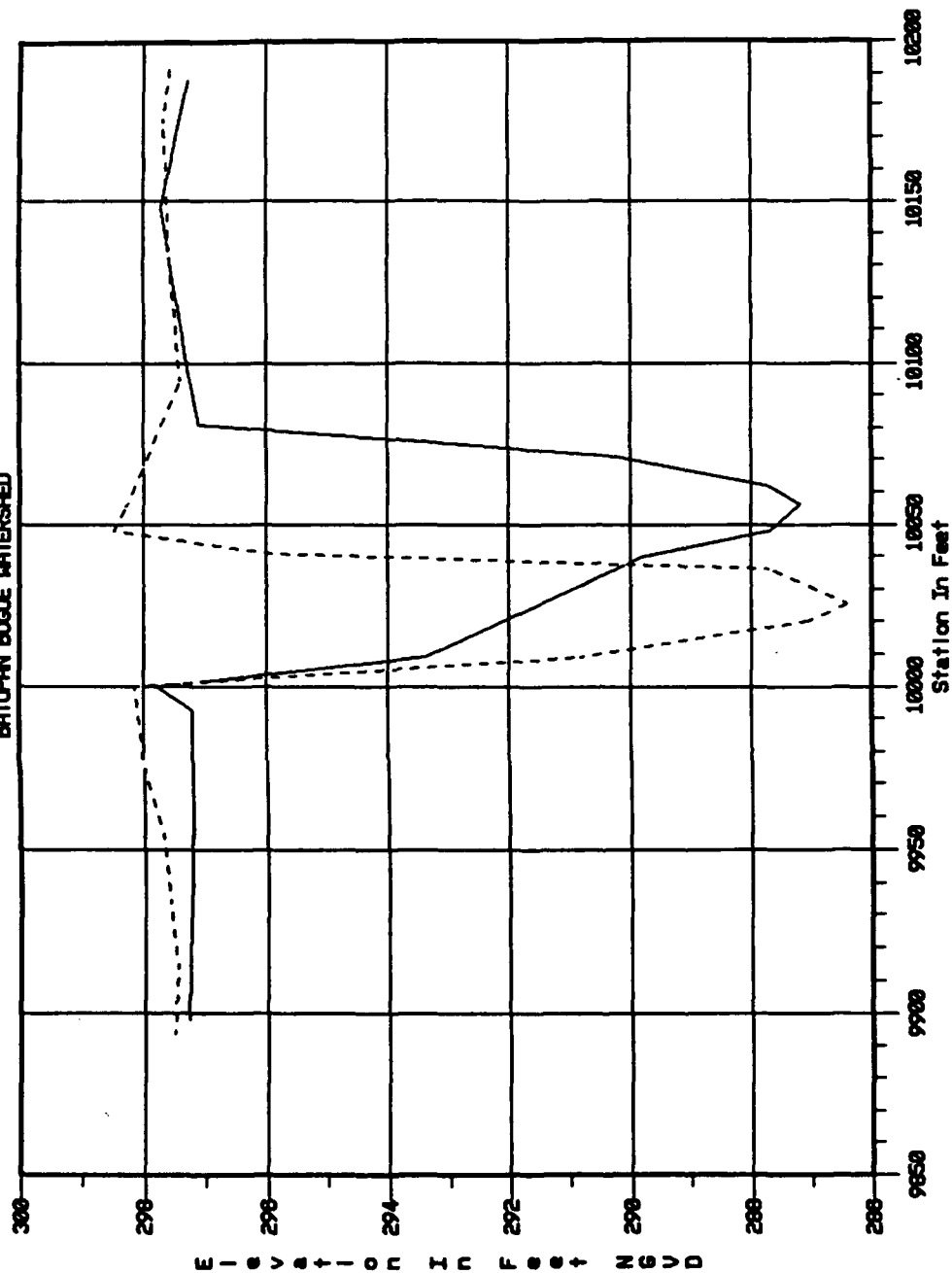
BATUPAN BOGUE WATERSHED



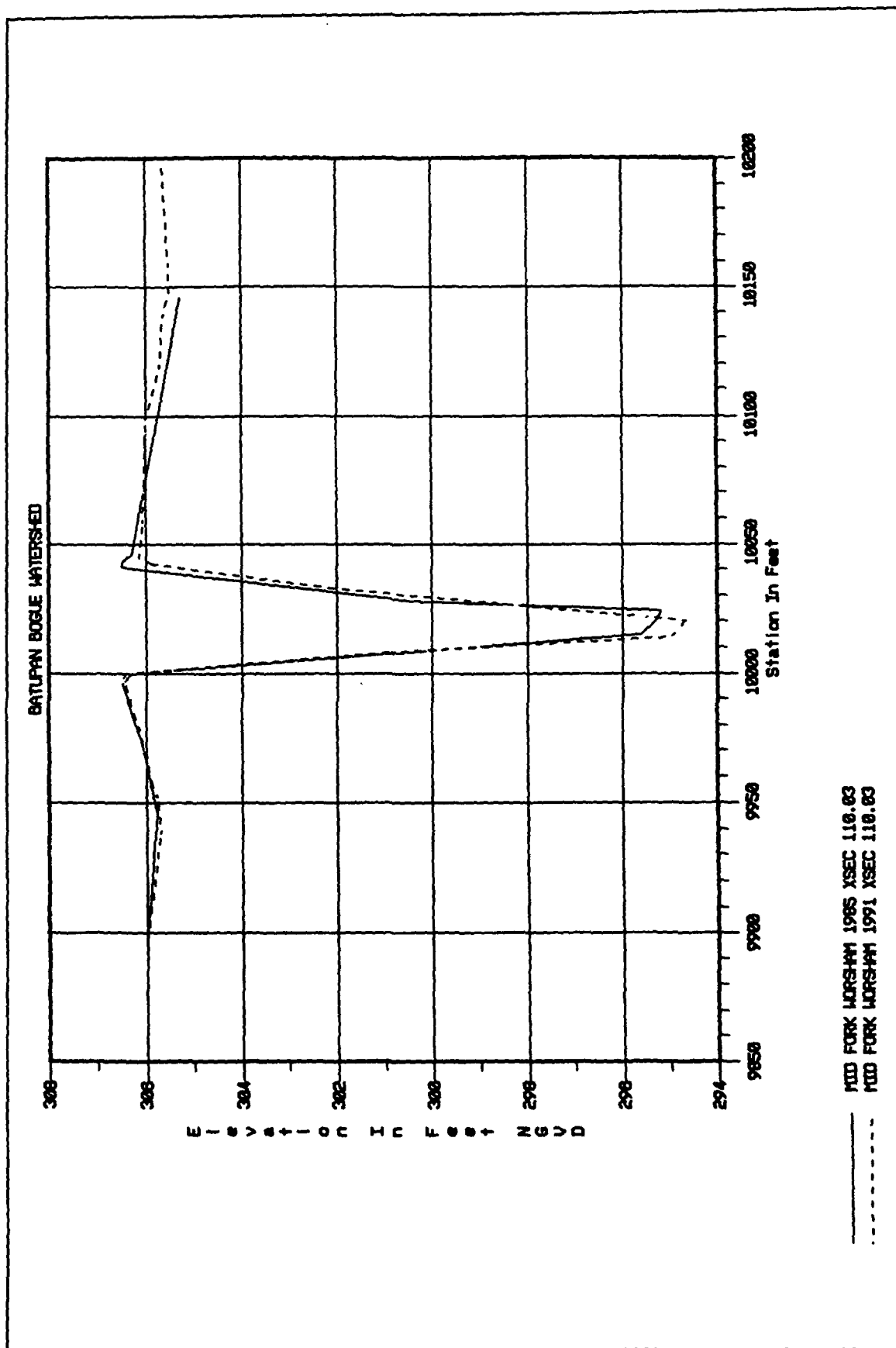
——— 1985 XSEC 29.95
 - - - 1991 XSEC 29.40



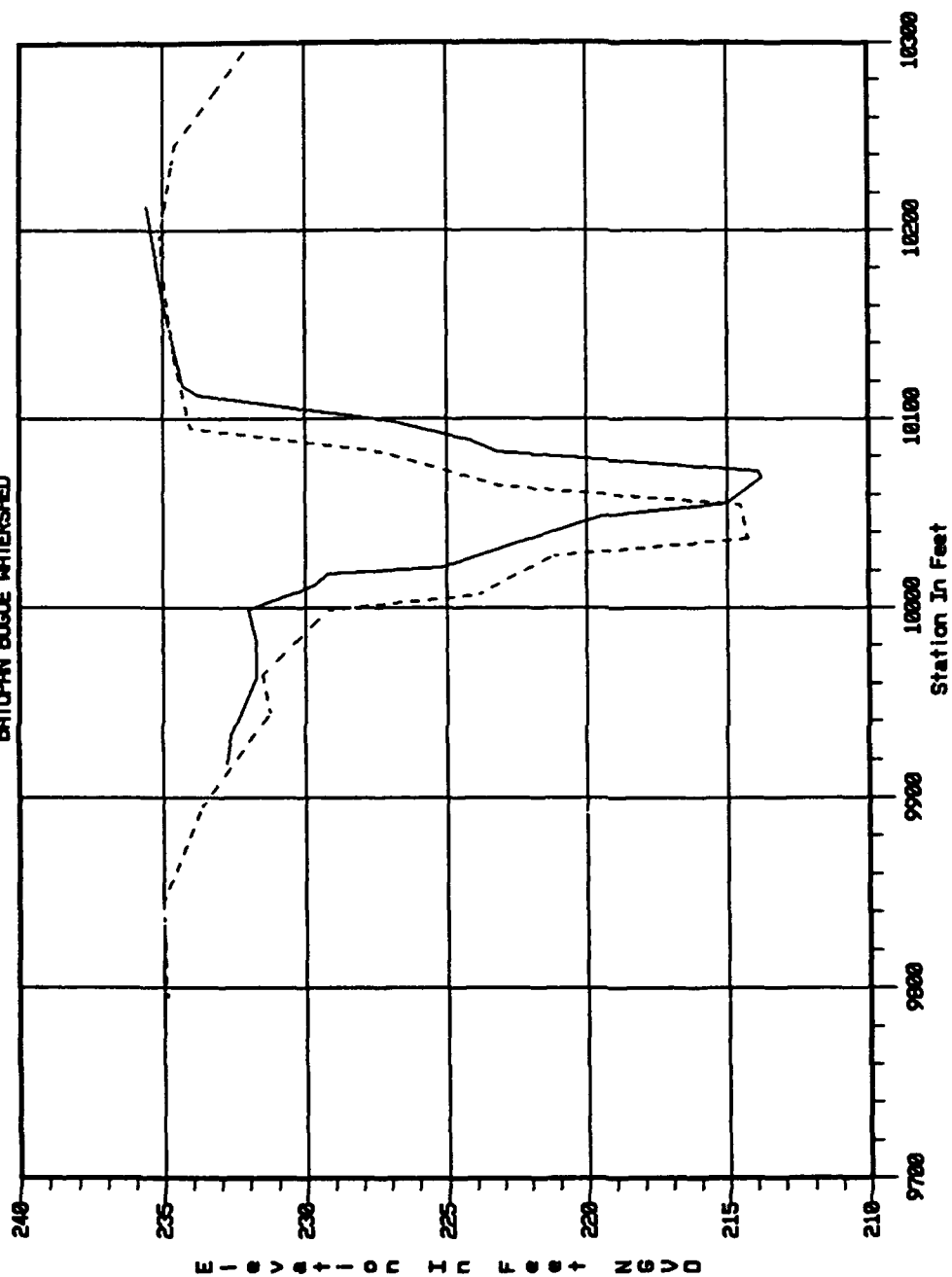
BATUPAN BOGLE WATERSHED



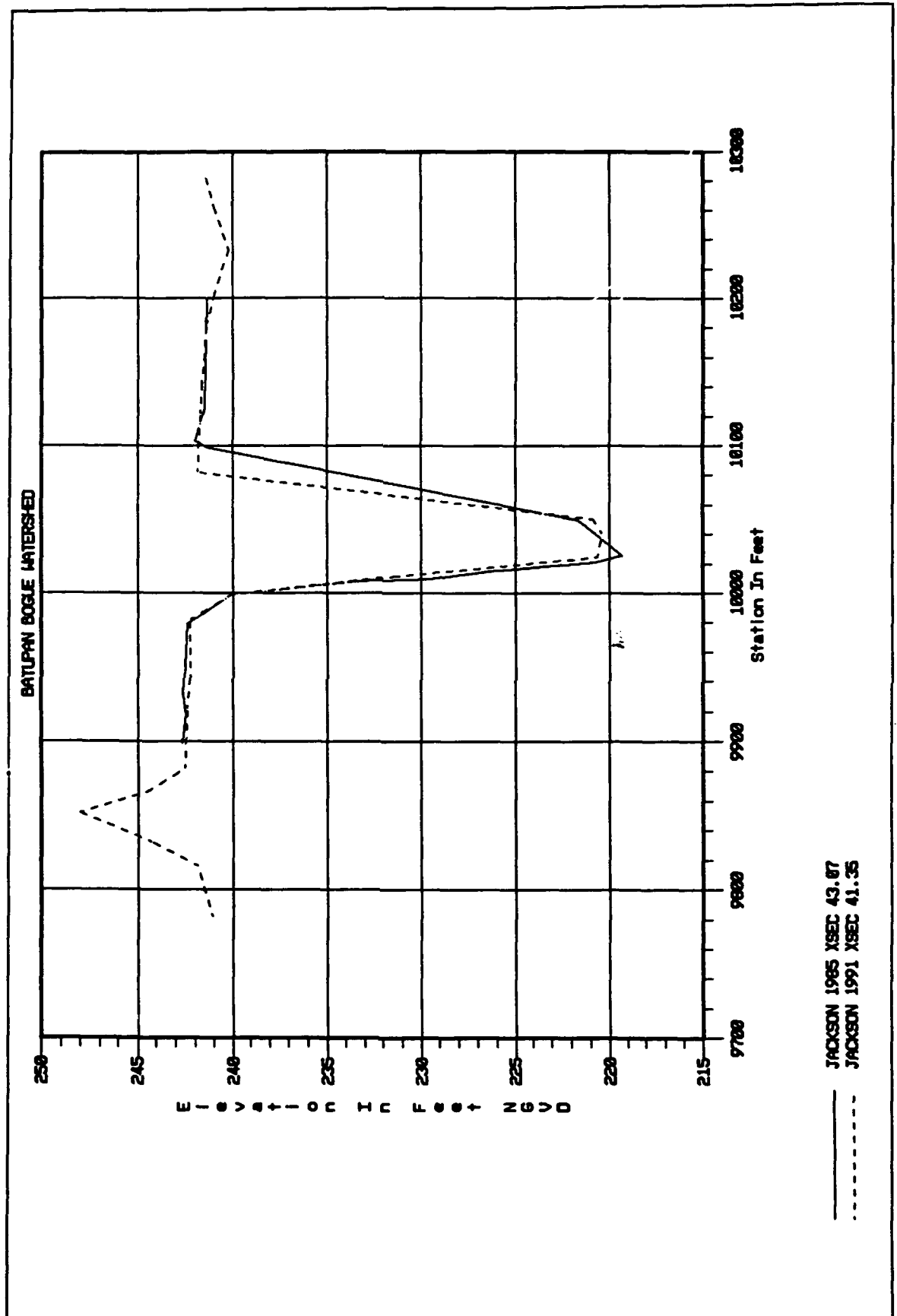
MID FORK LORSHAM 1985 XSEC 83.50
 MID FORK LORSHAM 1991 XSEC 84.90



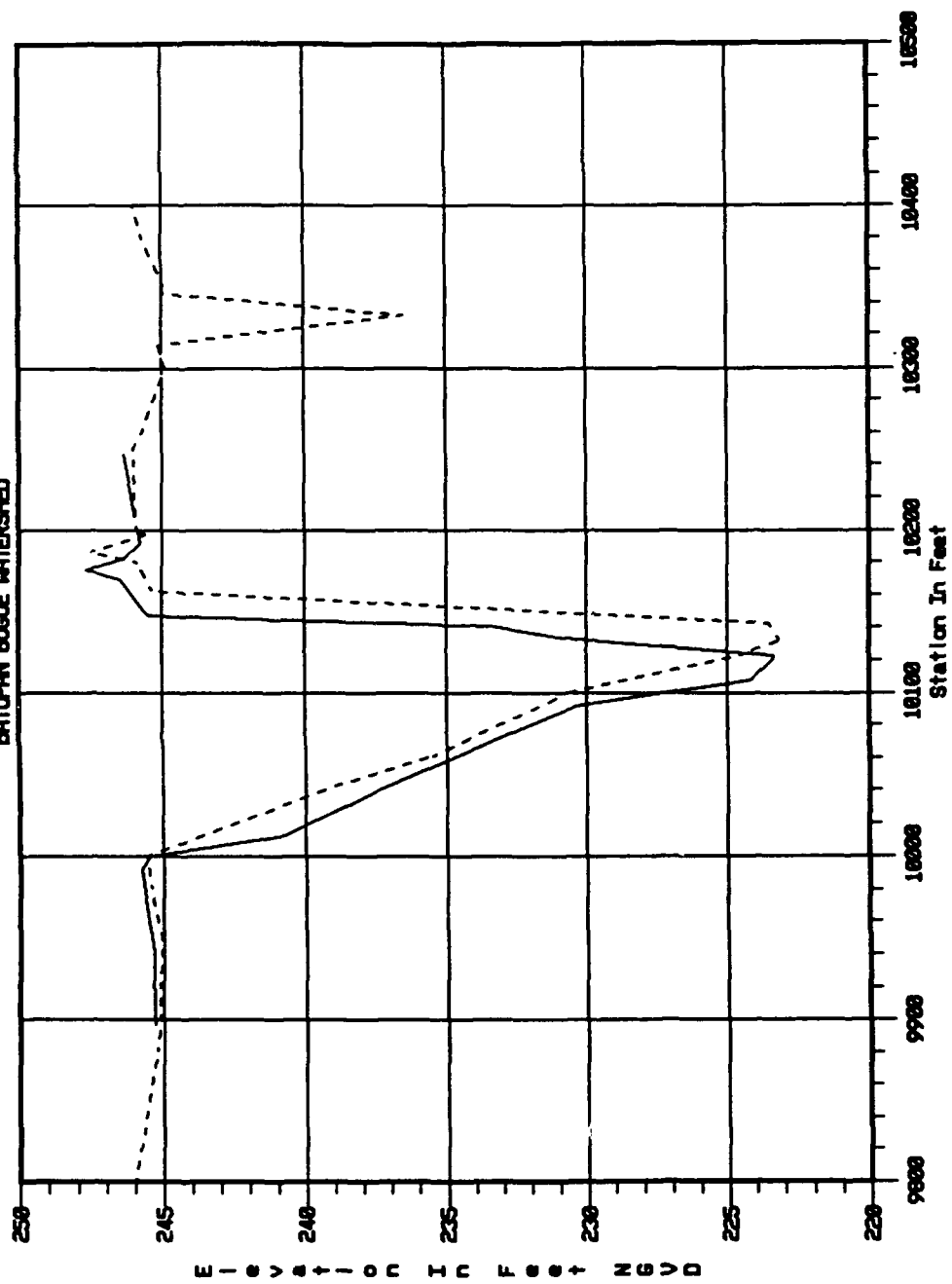
BATUPAN BOGUE WATERSHED



JACKSON 1985 XSEC 11.45
JACKSON 1991 XSEC 10.70

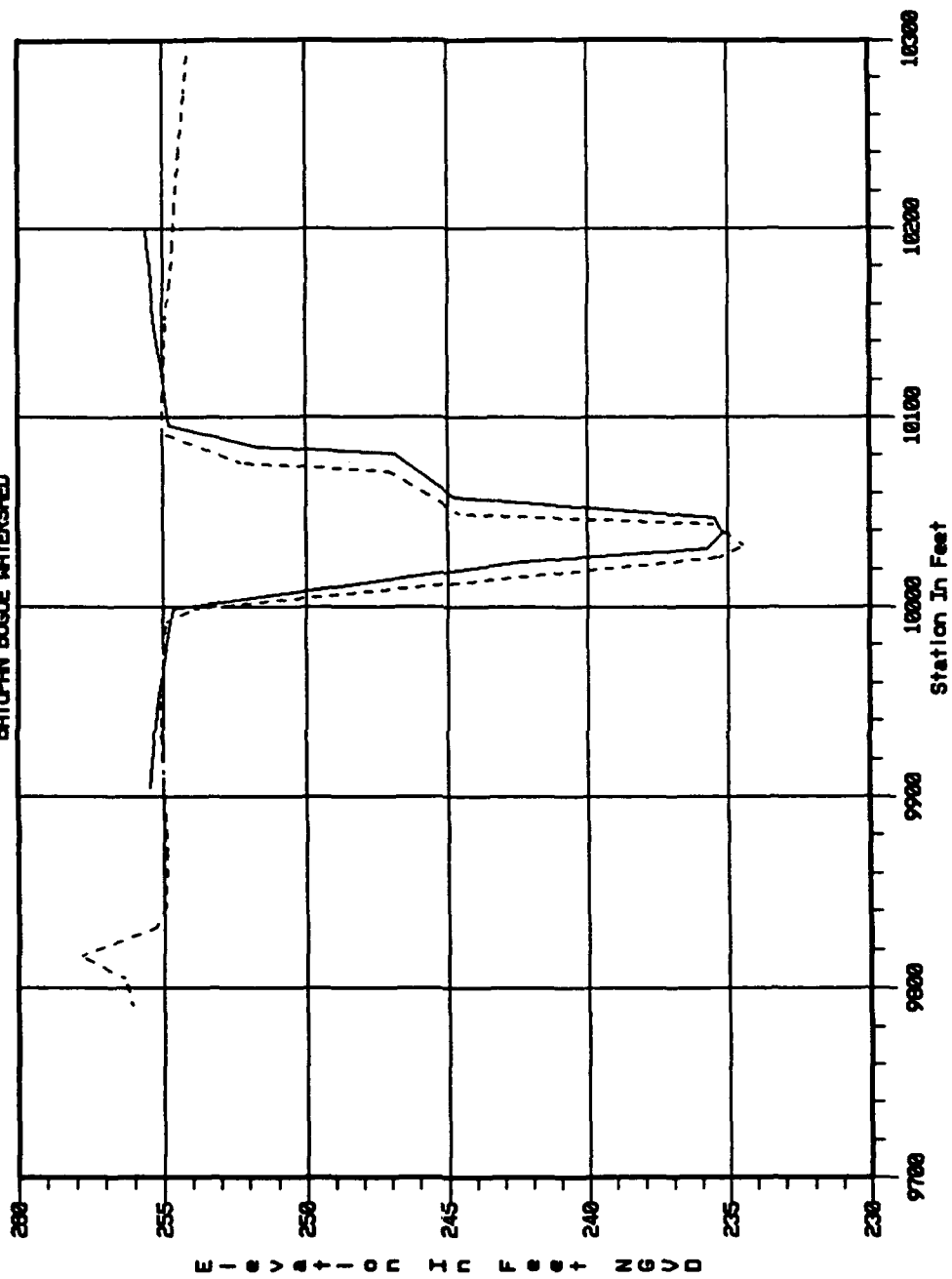


BATUPAN BOULE WATERSHED



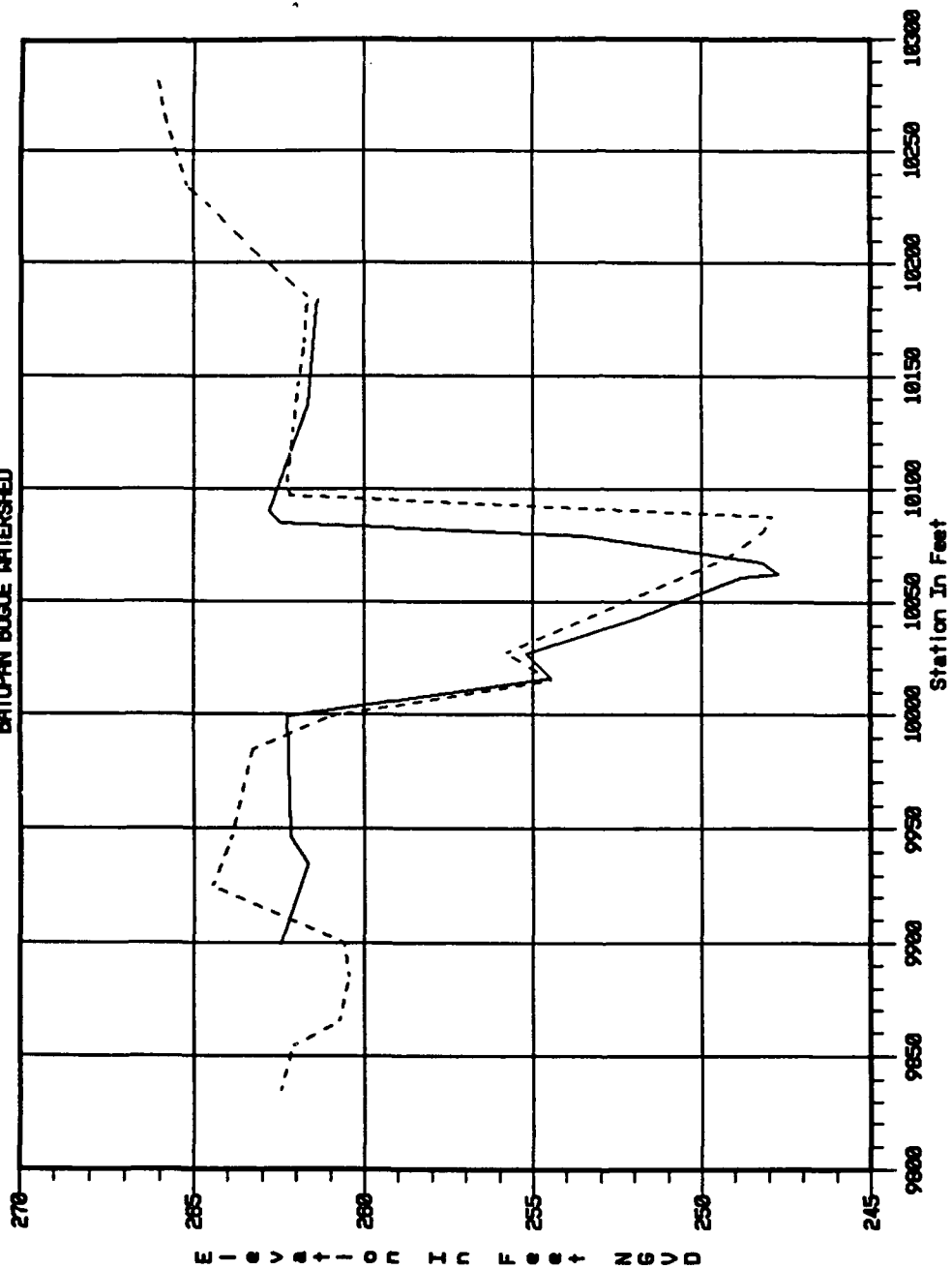
— JACKSON 1965 XSEC 61.98
 - - - JACKSON 1991 XSEC 59.53

BATUPAN BOSQUE WATERSHED

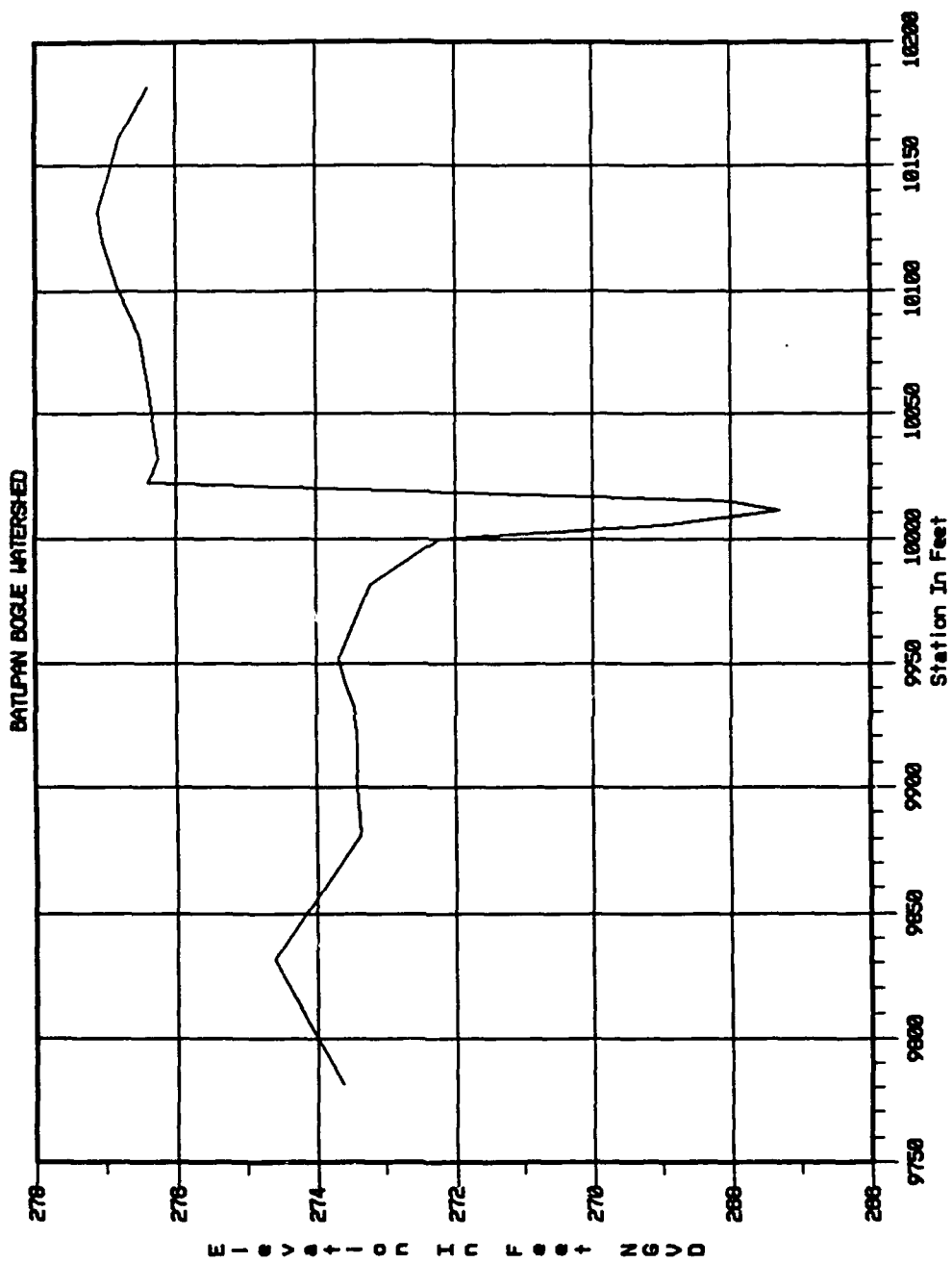


JACKSON 1985 XSEC 108.12
 JACKSON 1991 XSEC 103.44

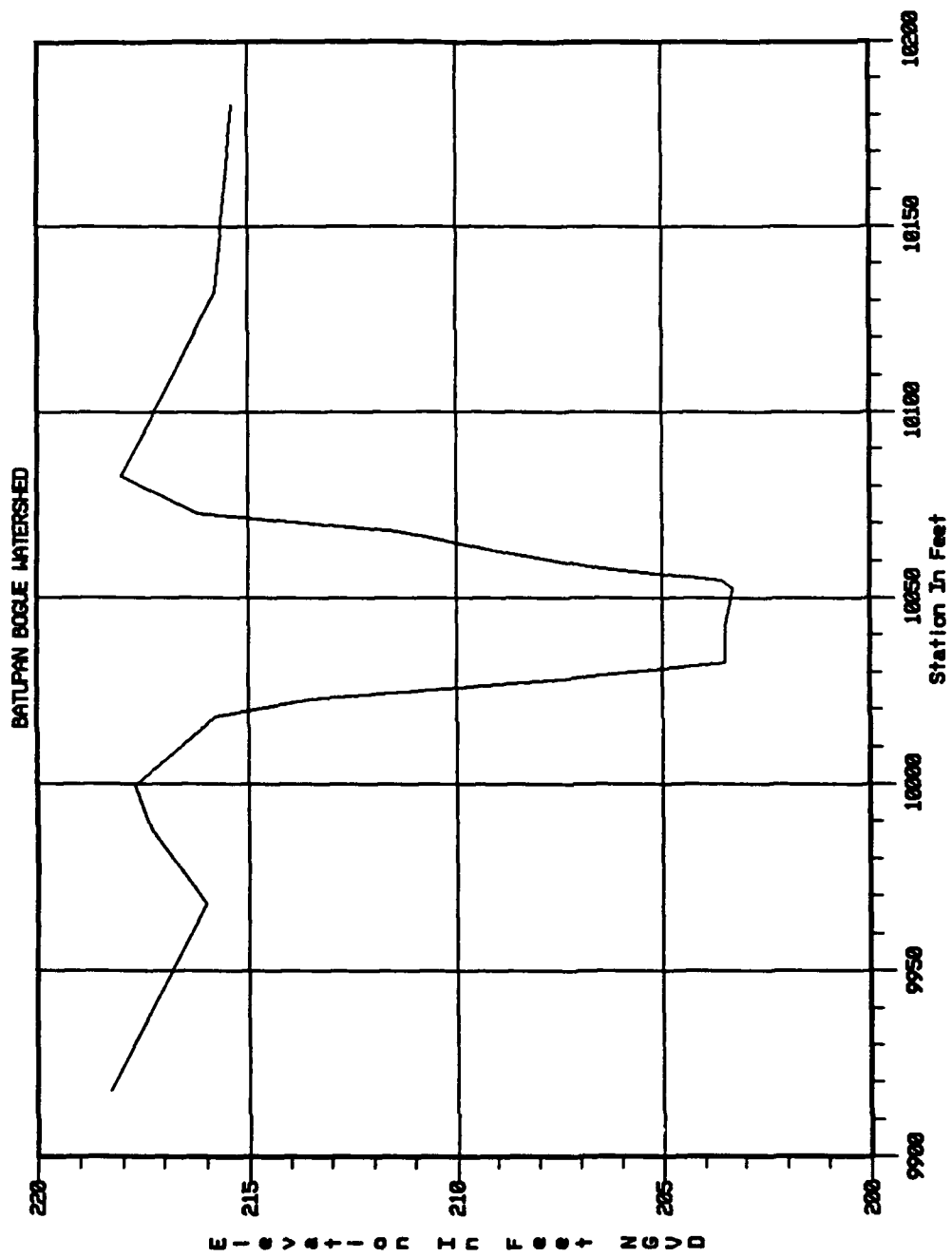
BATUPAN BOULE WATERSHED



— JACKSON 1985 XSEC 144.40
 - - - JACKSON 1991 XSEC 140.50

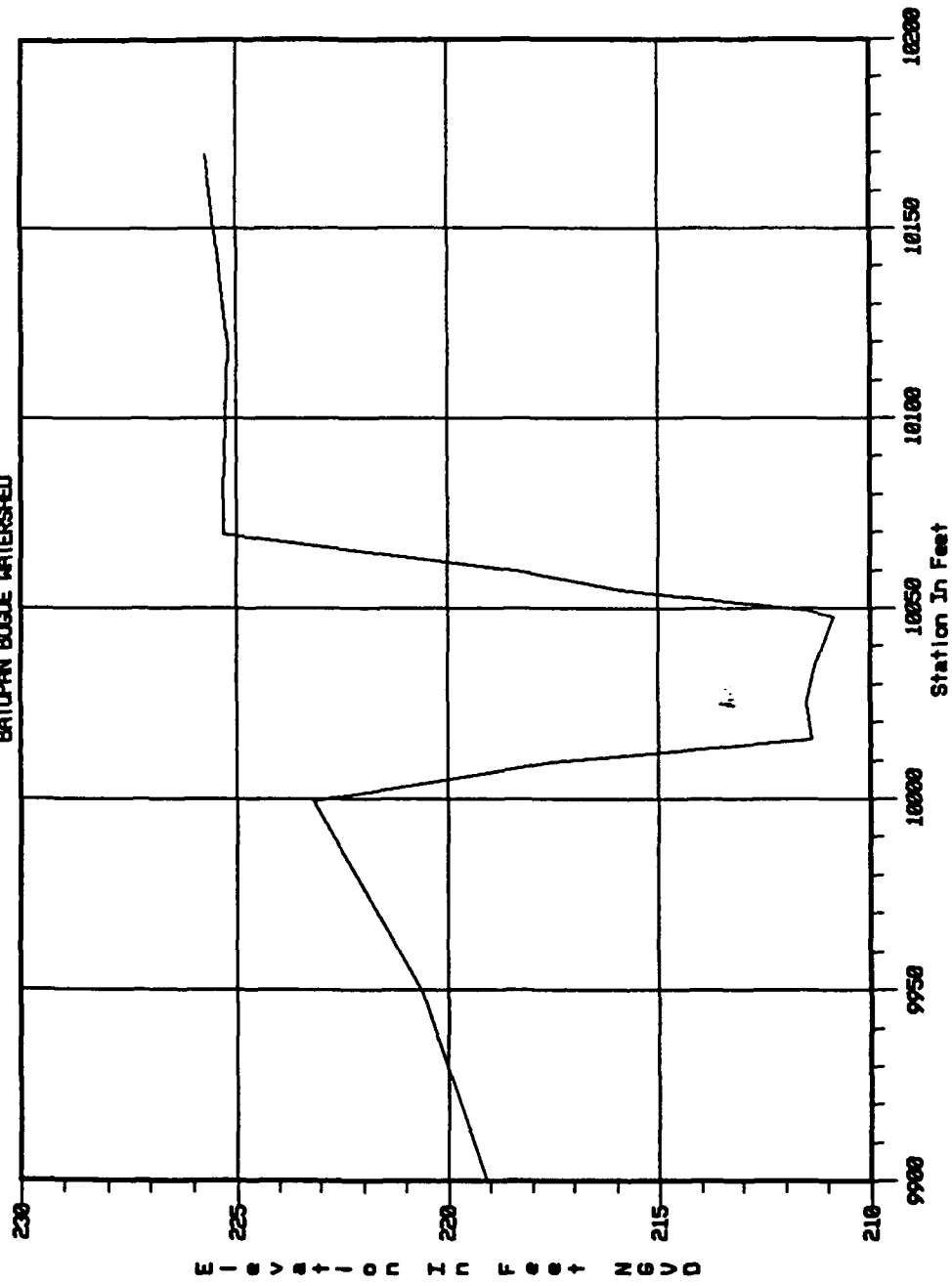


JACKSON 1991 XSEC 202.85



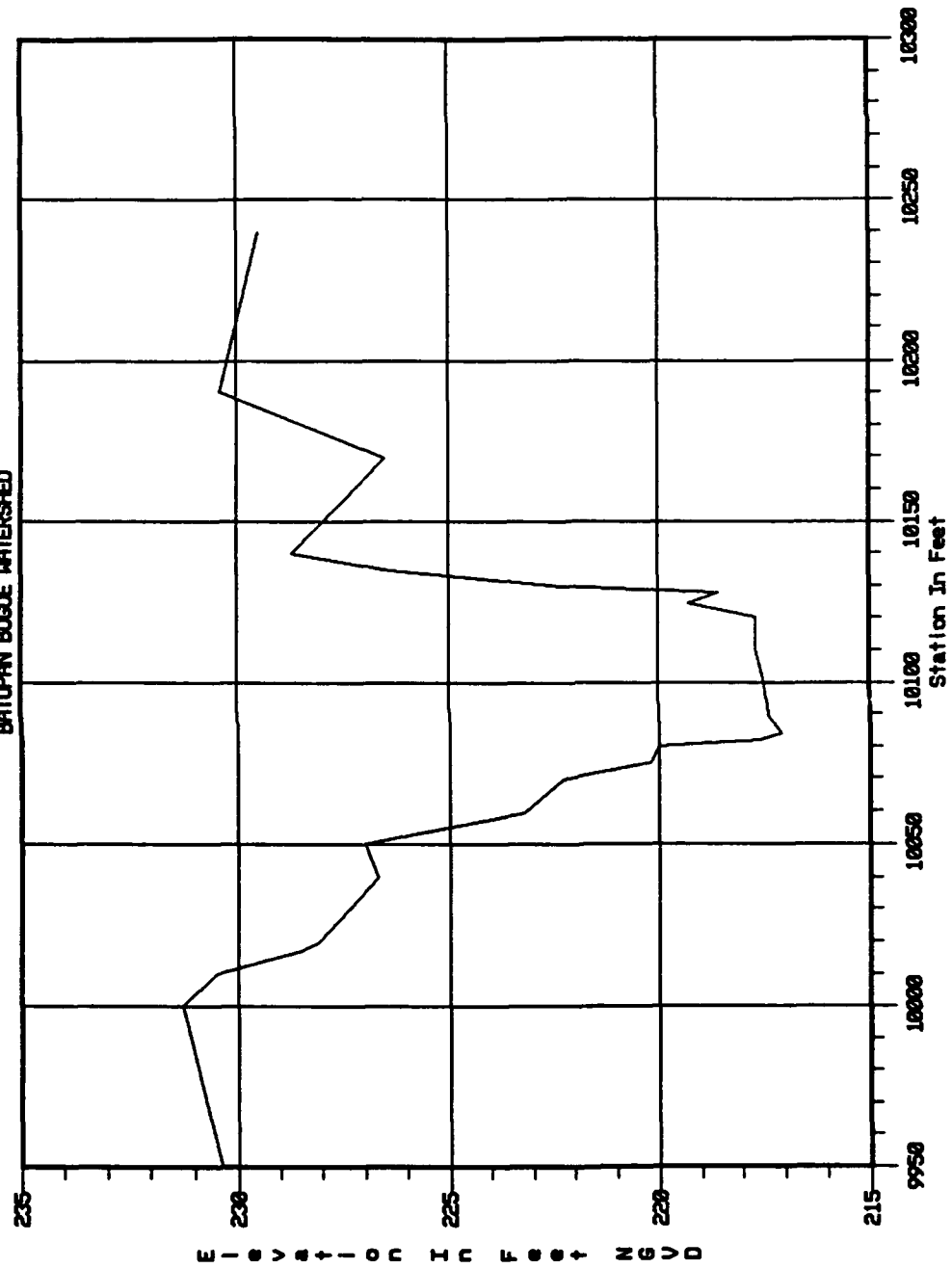
—— HOLLINGS 1985 XSEC 4.21

BATUPAN BOULE WATERSHED

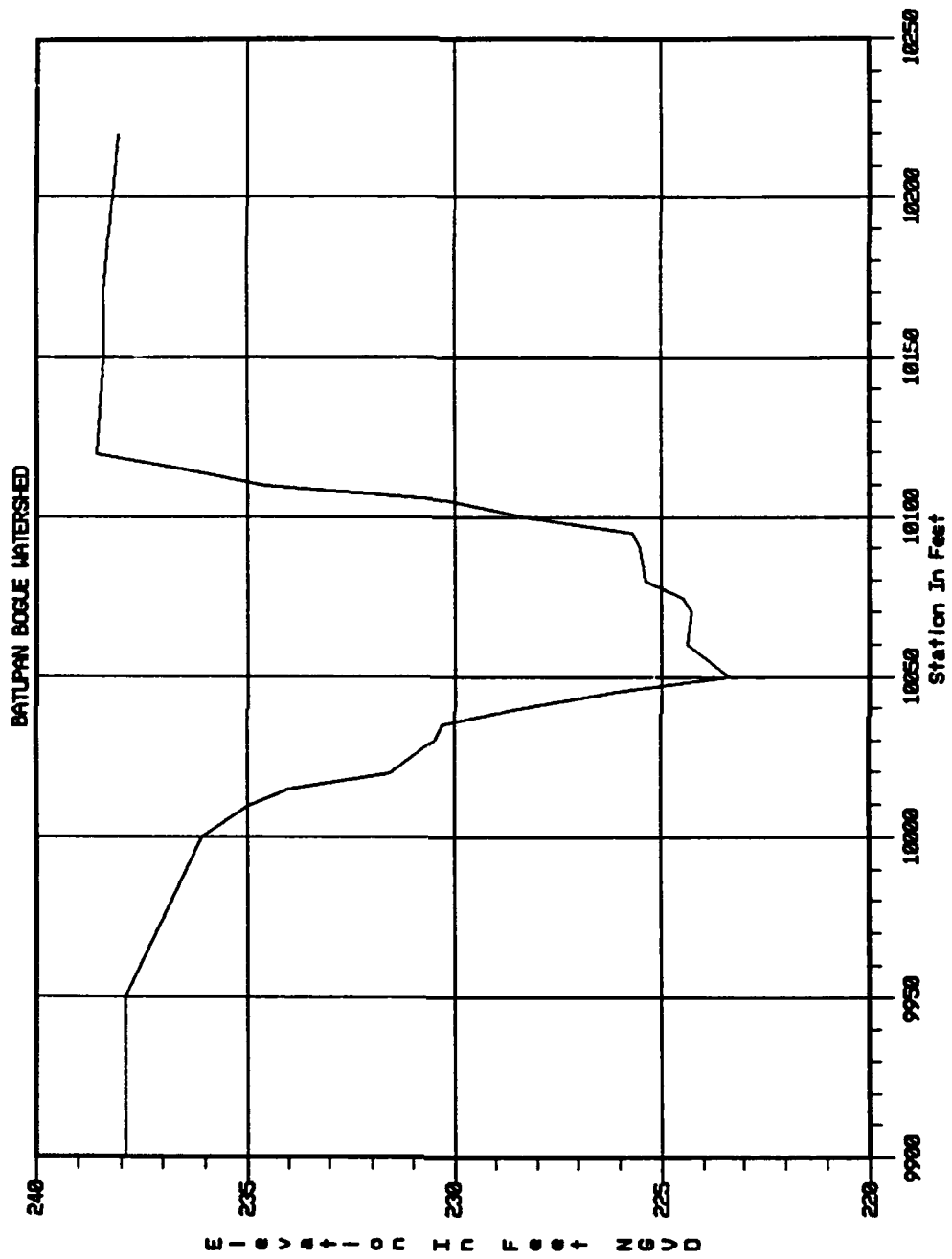


WILKINS 1985 XSEC 30.40

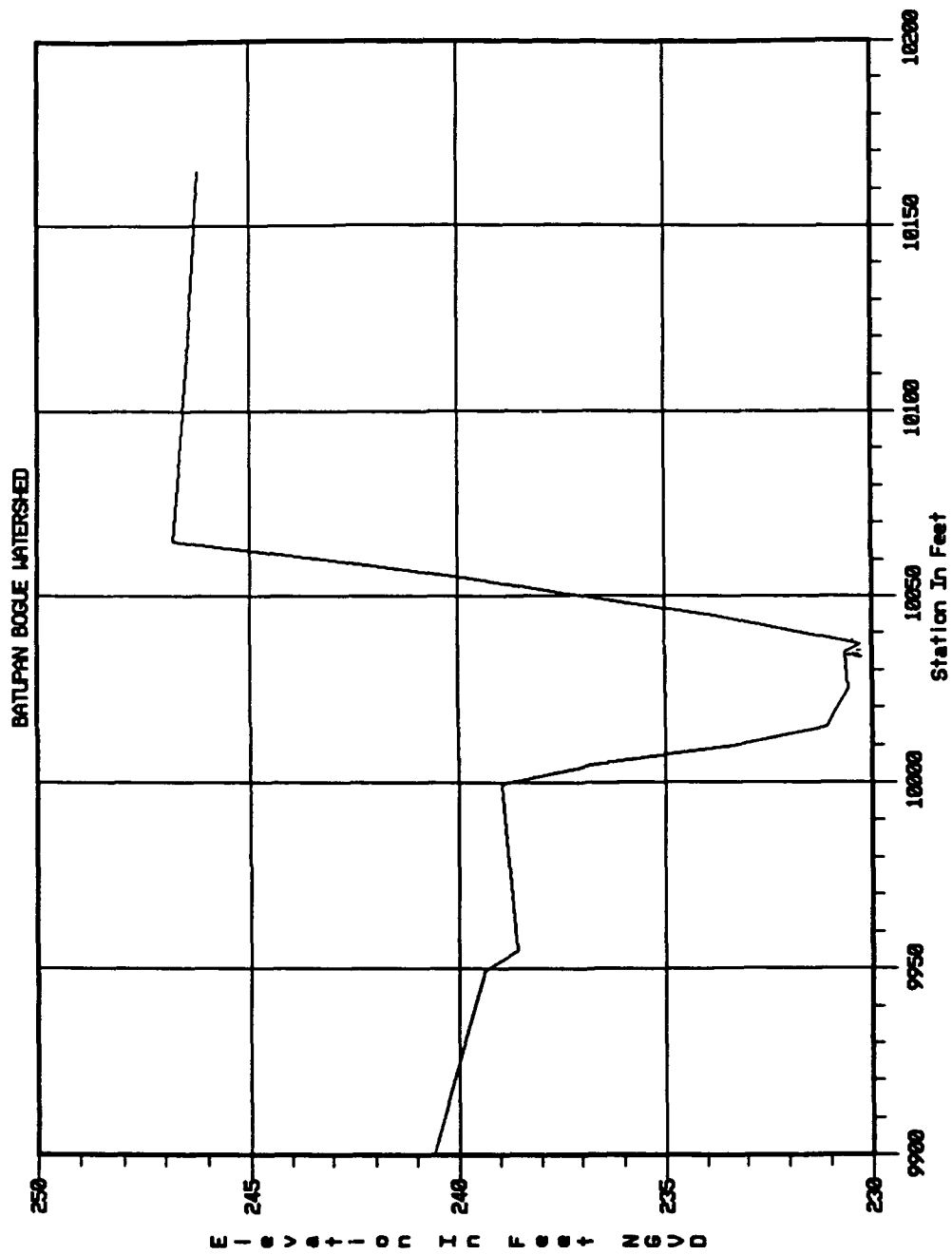
BATUPAN BOGLE WATERSHED



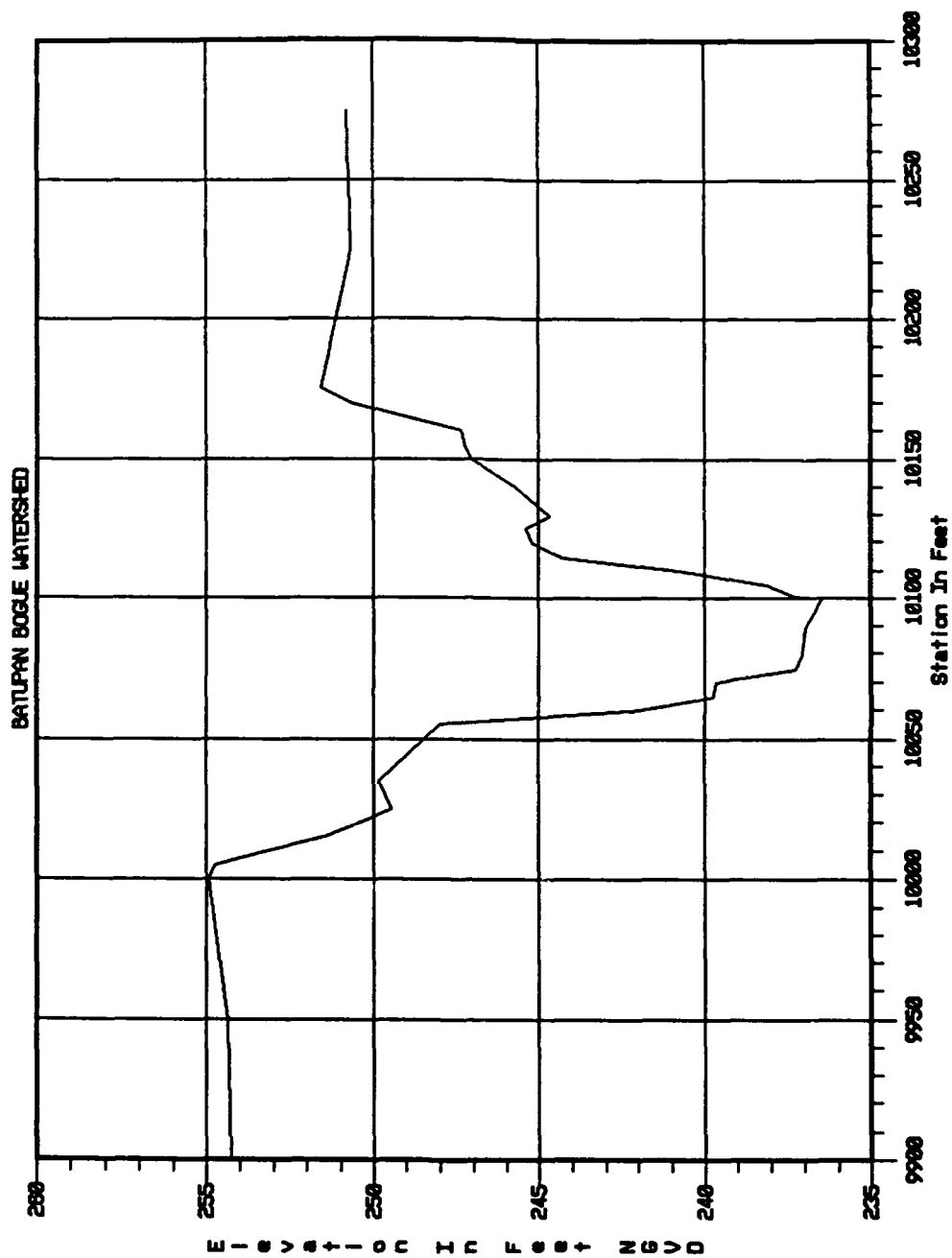
HILKINS 1985 XSEC 57.40



WILKINS 1985 XSEC 85.15

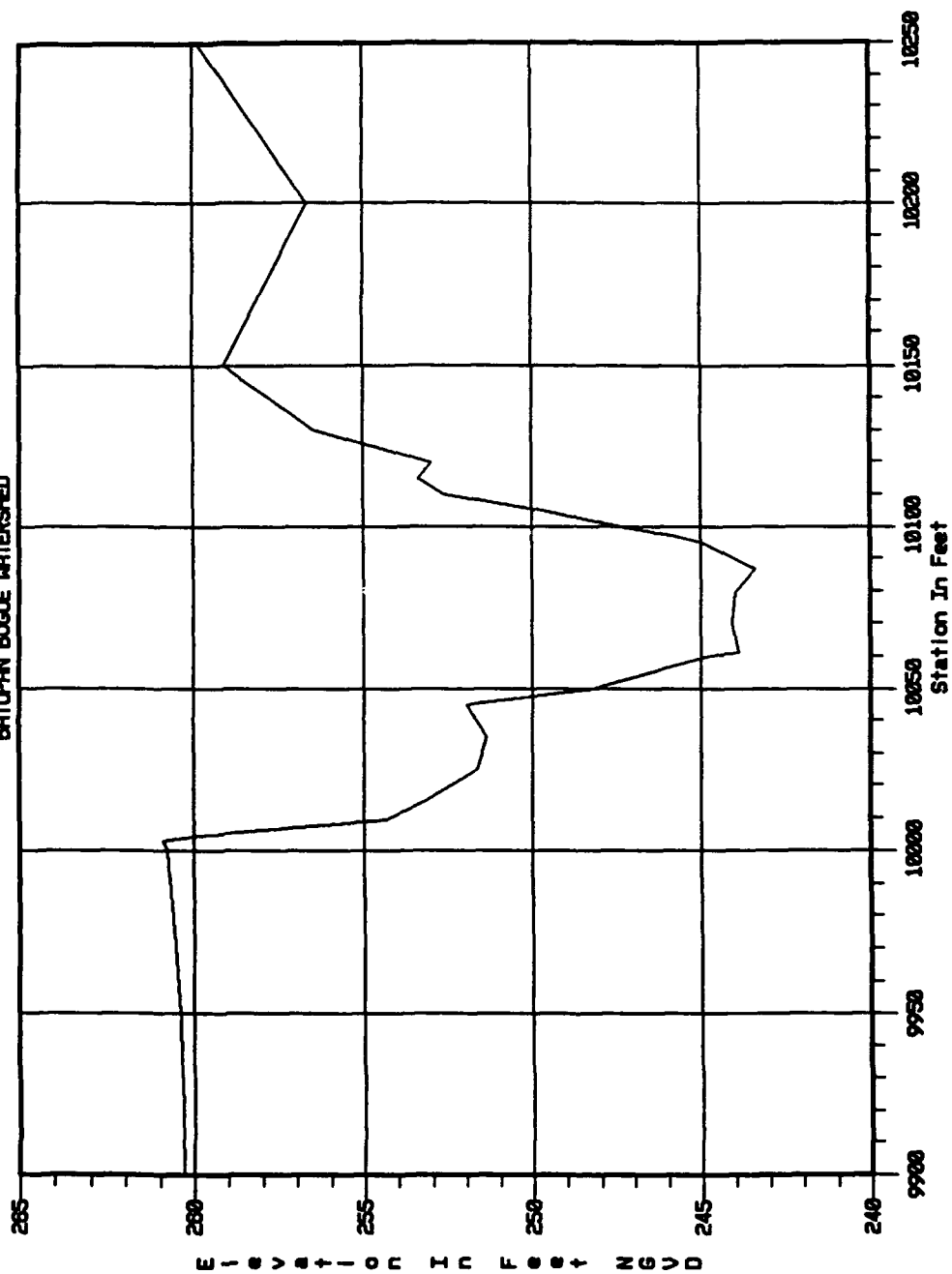


—— WILKINS 1985 XSEC 118.15

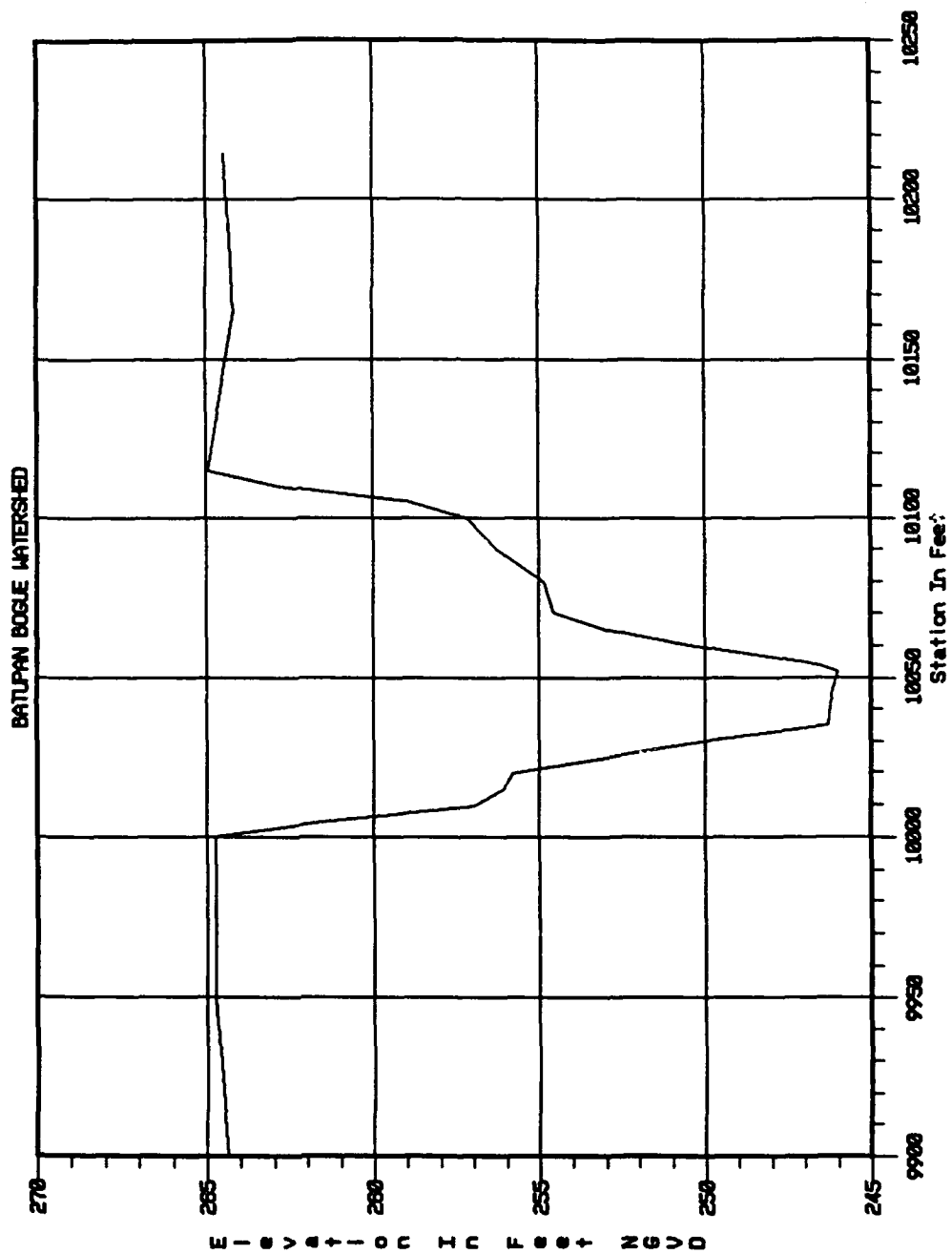


WILKINS 1965 XSEC 143.02

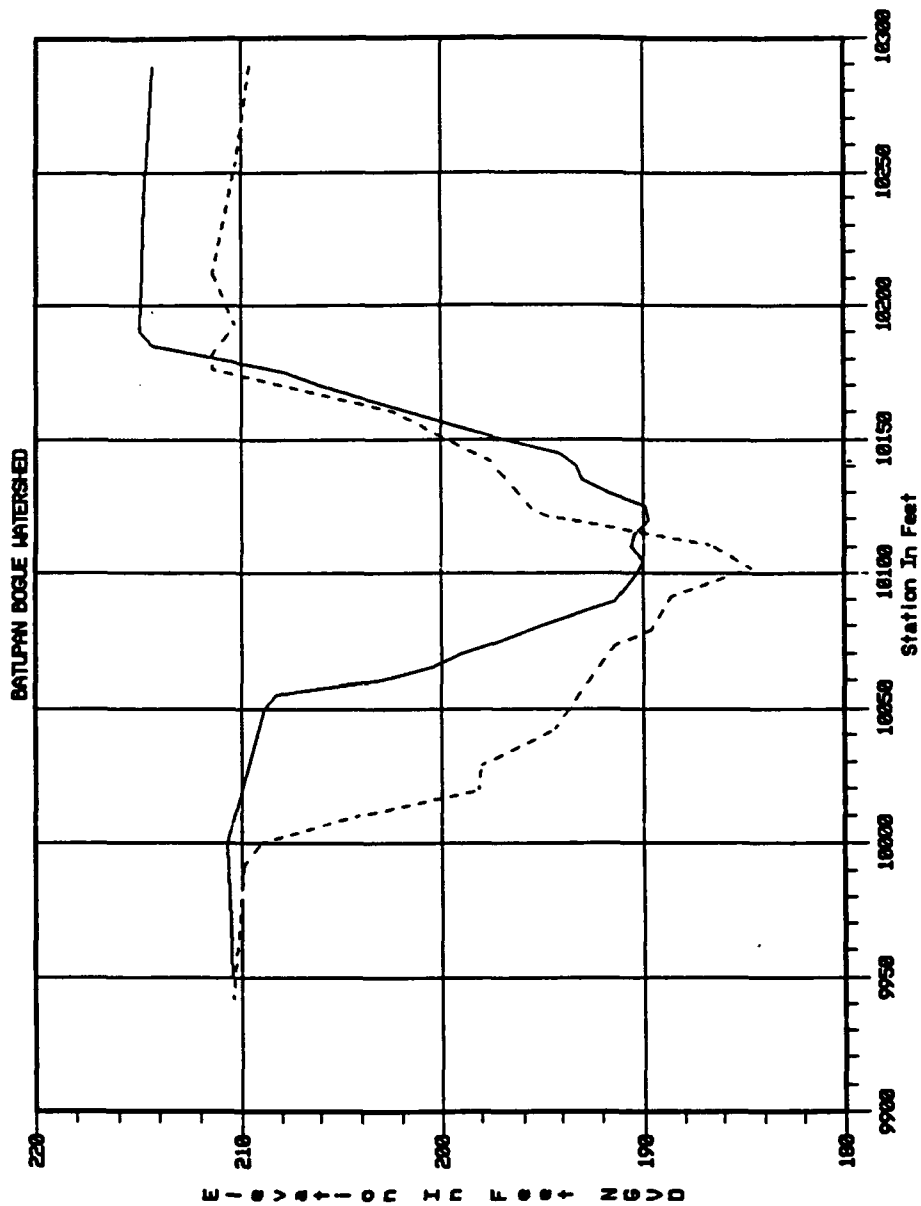
BATUPAN BOGLE INTERSECT



WILKINS 1985 XSEC 170.18

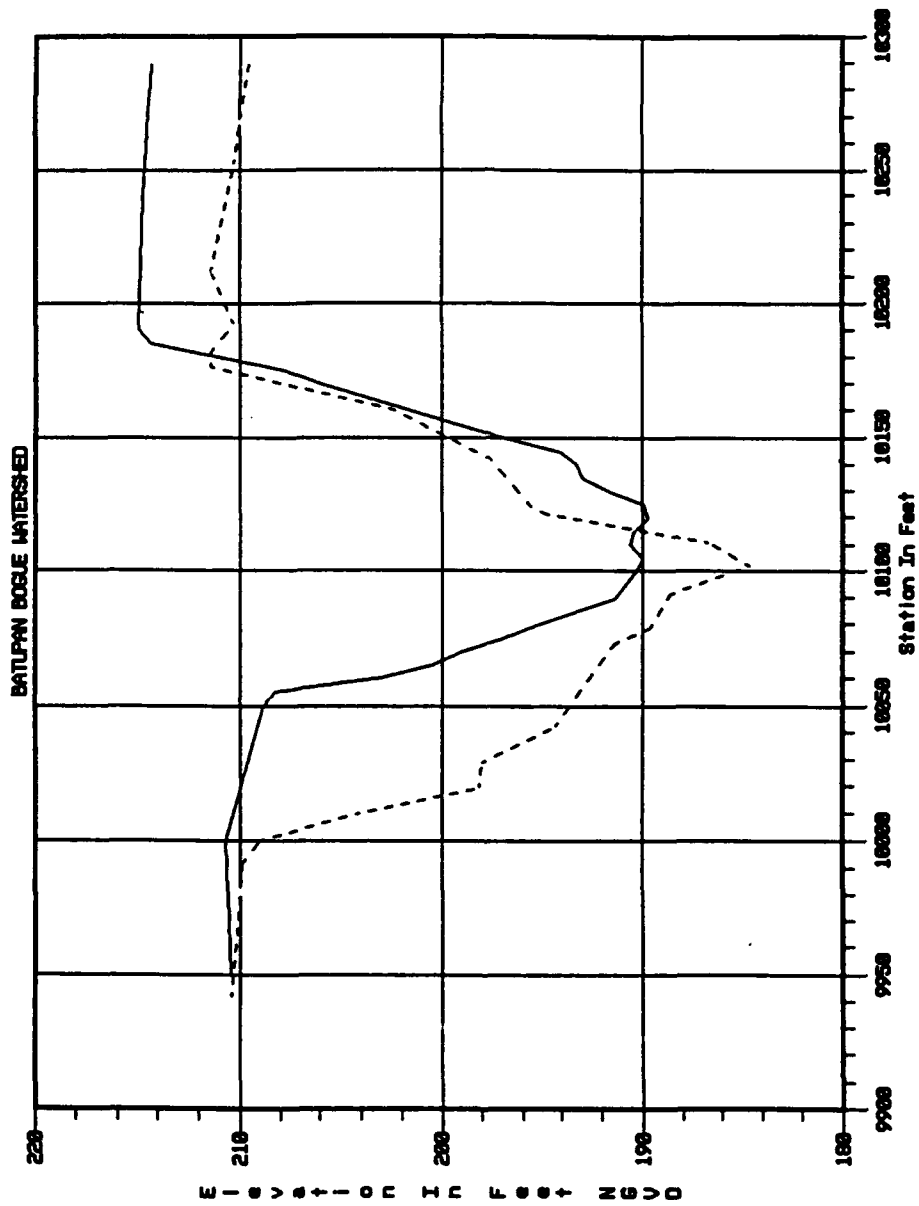


——— HULLKINS 1985 XSEC 183.00



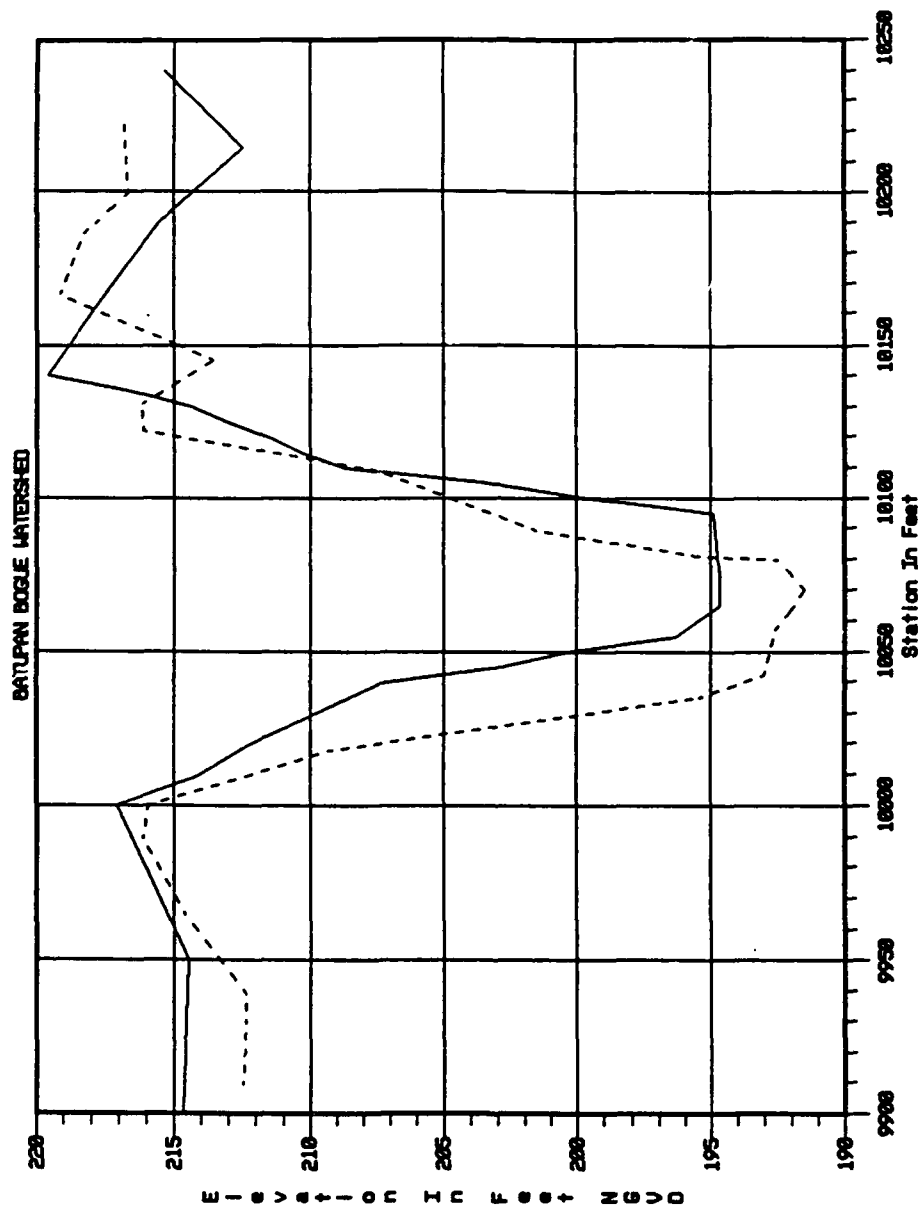
— LITTLE BOGLE 1985 XSEC 9.50
 - - - LITTLE BOGLE 1991 XSEC 9.50

The 1985 and 1991 cross sections were surveyed at different locations.



——— LITTLE BOGLE 1985 XSEC 26.00
 - - - - - LITTLE BOGLE 1991 XSEC 27.30

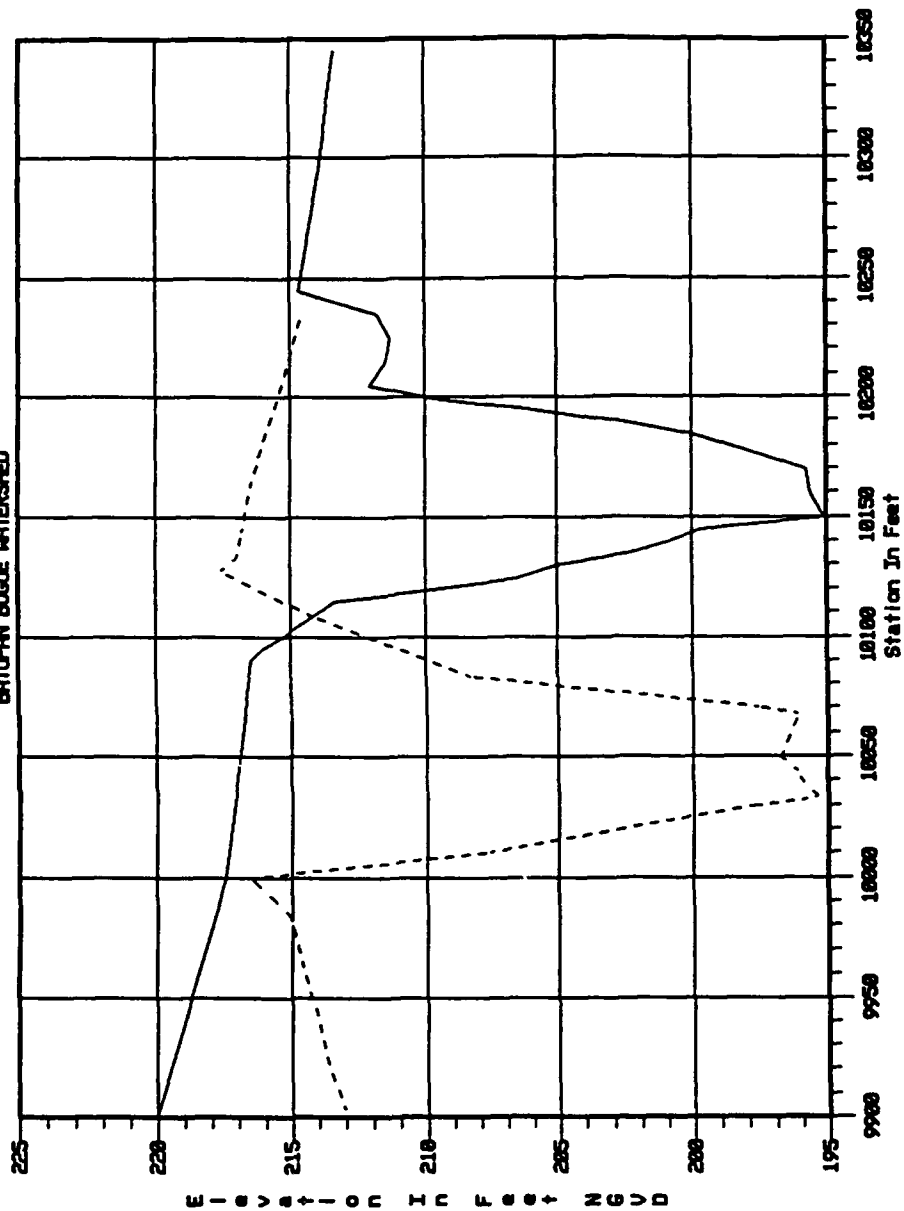
The 1985 and 1991 cross sections were surveyed at different locations.



———— LITTLE BOGLE 1985 XSEC 83.10
 - - - - - LITTLE BOGLE 1991 XSEC 85.10

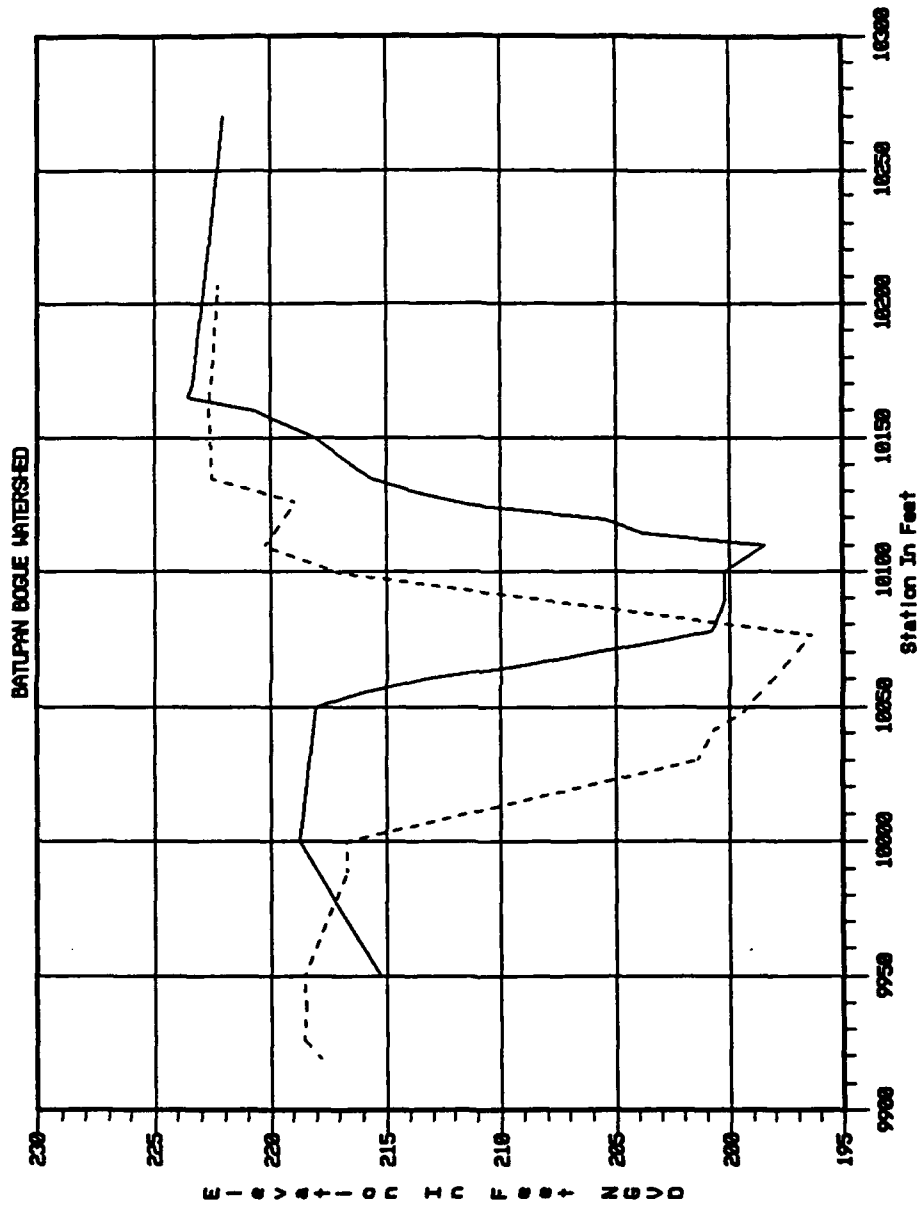
The 1985 and 1991 cross sections were surveyed at different locations.

BATUPAN BOGLE WATERSHED



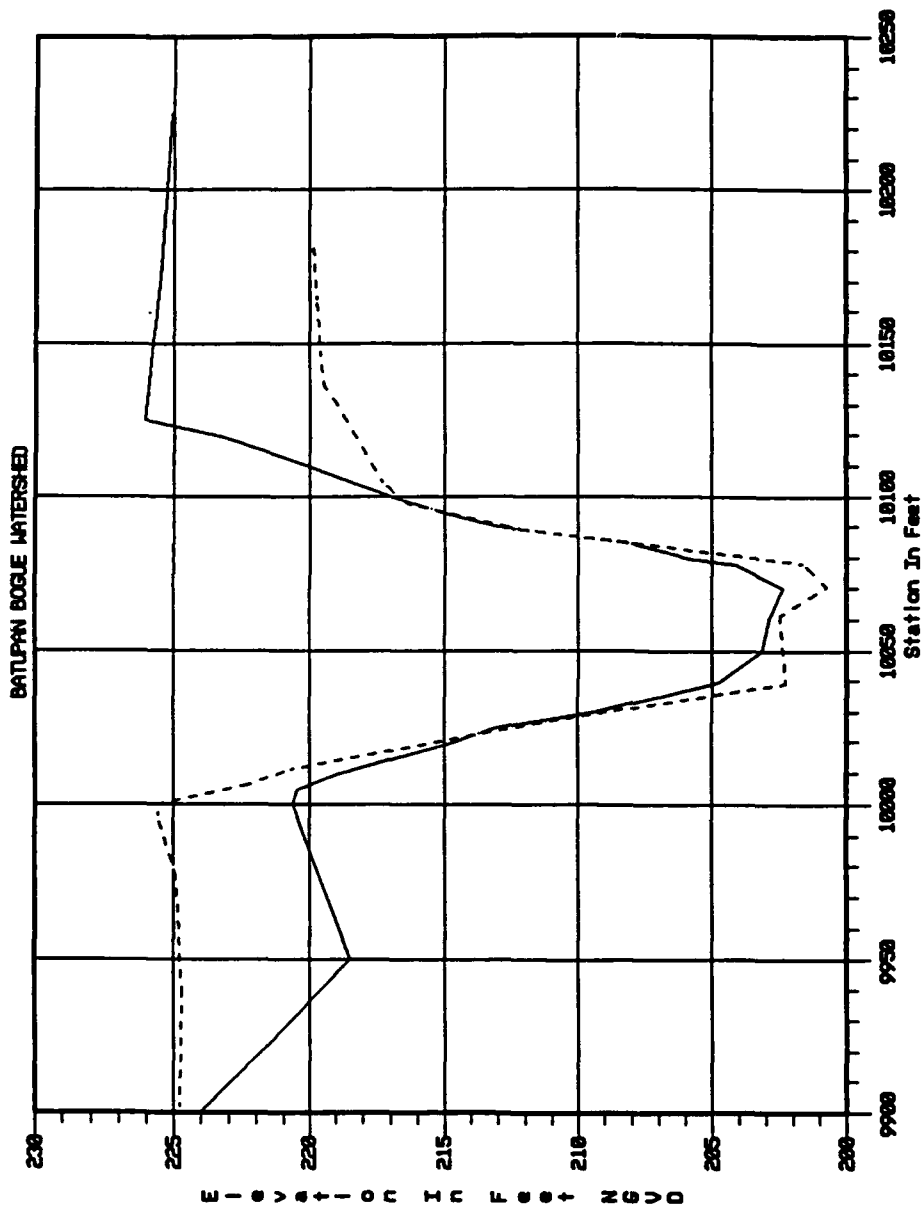
— LITTLE BOGLE 1985 XSEC 90.52
 - - - LITTLE BOGLE 1991 XSEC 89.38

The 1985 and 1991 cross sections were surveyed at different locations.



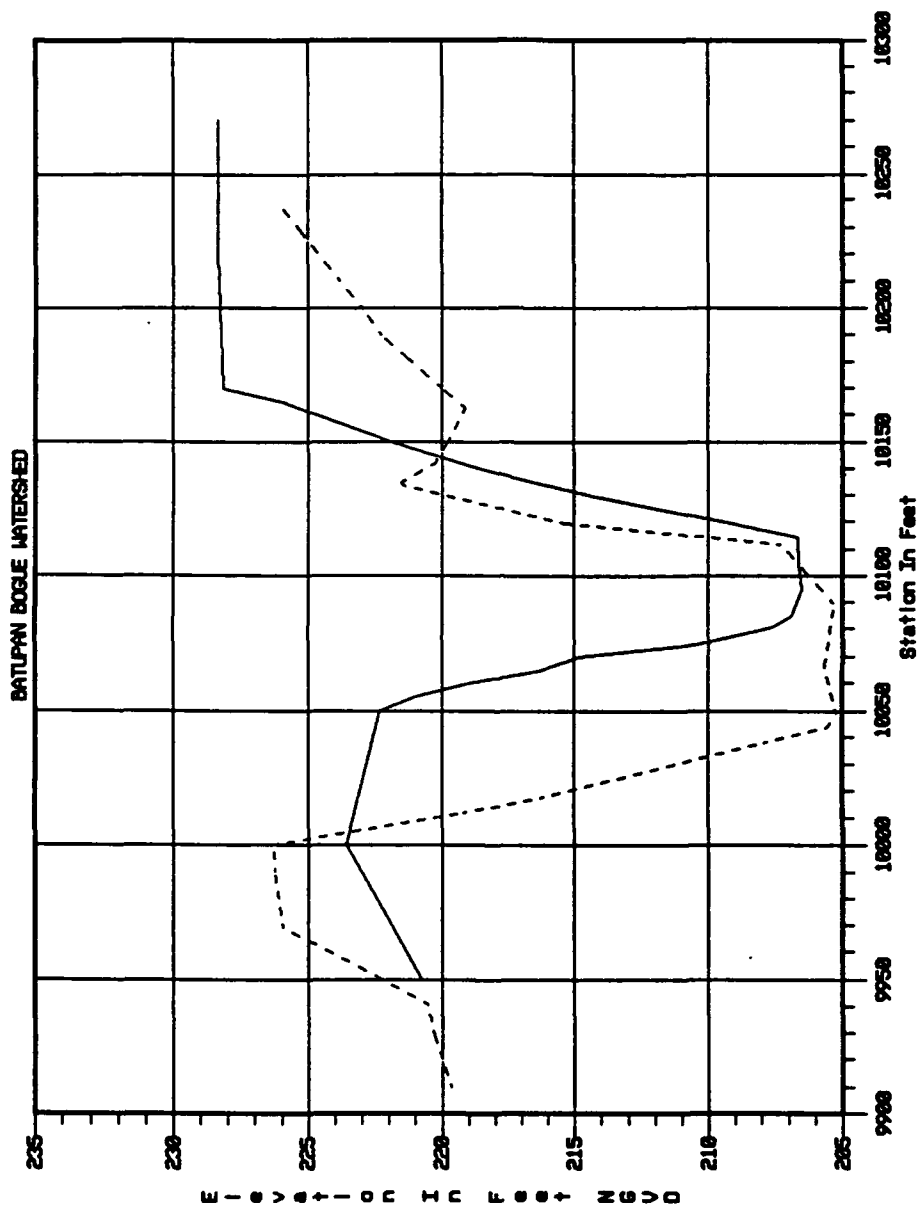
— LITTLE BOGLE 1985 XSEC 118.83
 - - - LITTLE BOGLE 1991 XSEC 114.56

The 1985 and 1991 cross sections were surveyed at different locations.



——— LITTLE BOGUE 1985 XSEC 143.94
 - - - - - LITTLE BOGUE 1991 XSEC 141.10

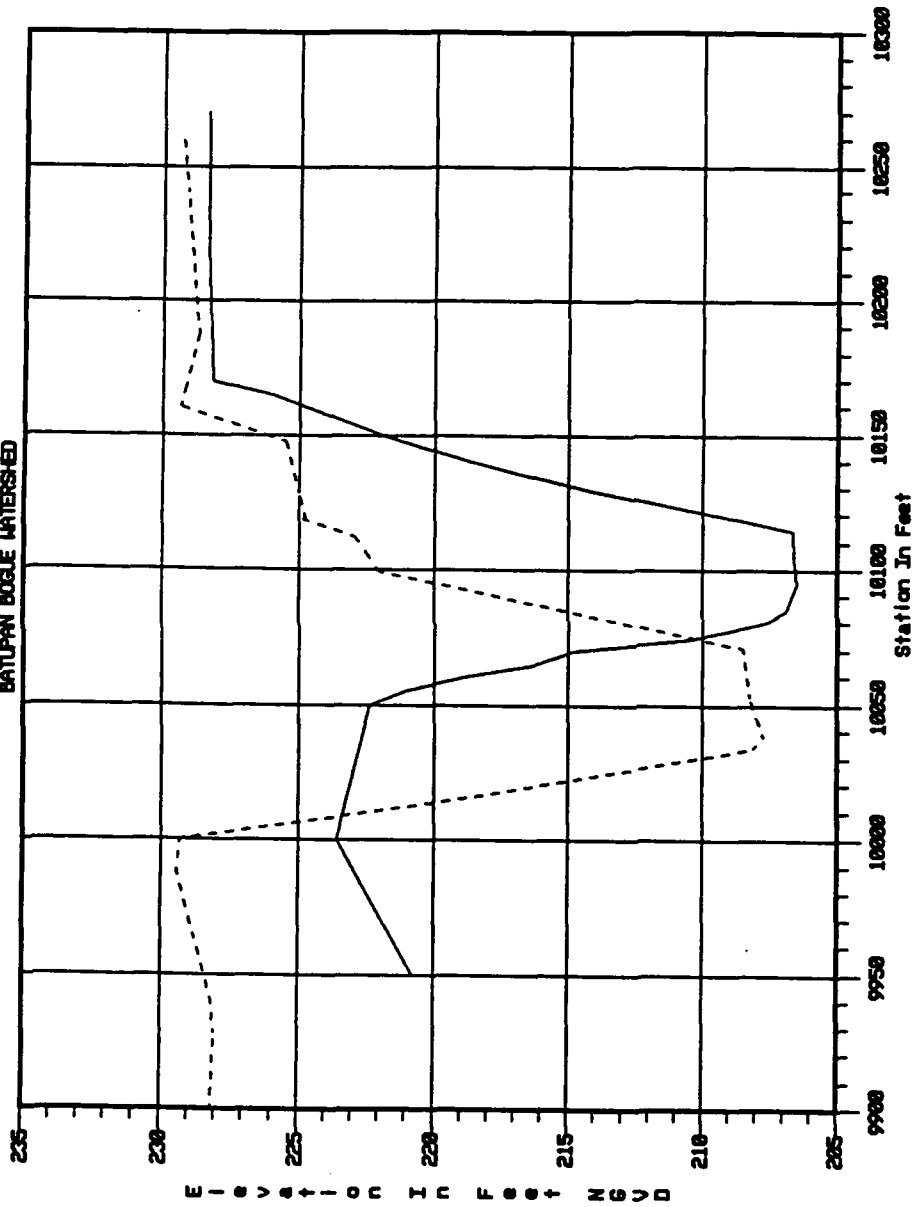
The 1985 and 1991 cross sections were surveyed at different locations.



——— LITTLE BOGLE 1985 XSEC 176.72
 - - - - - LITTLE BOGLE 1991 XSEC 167.32

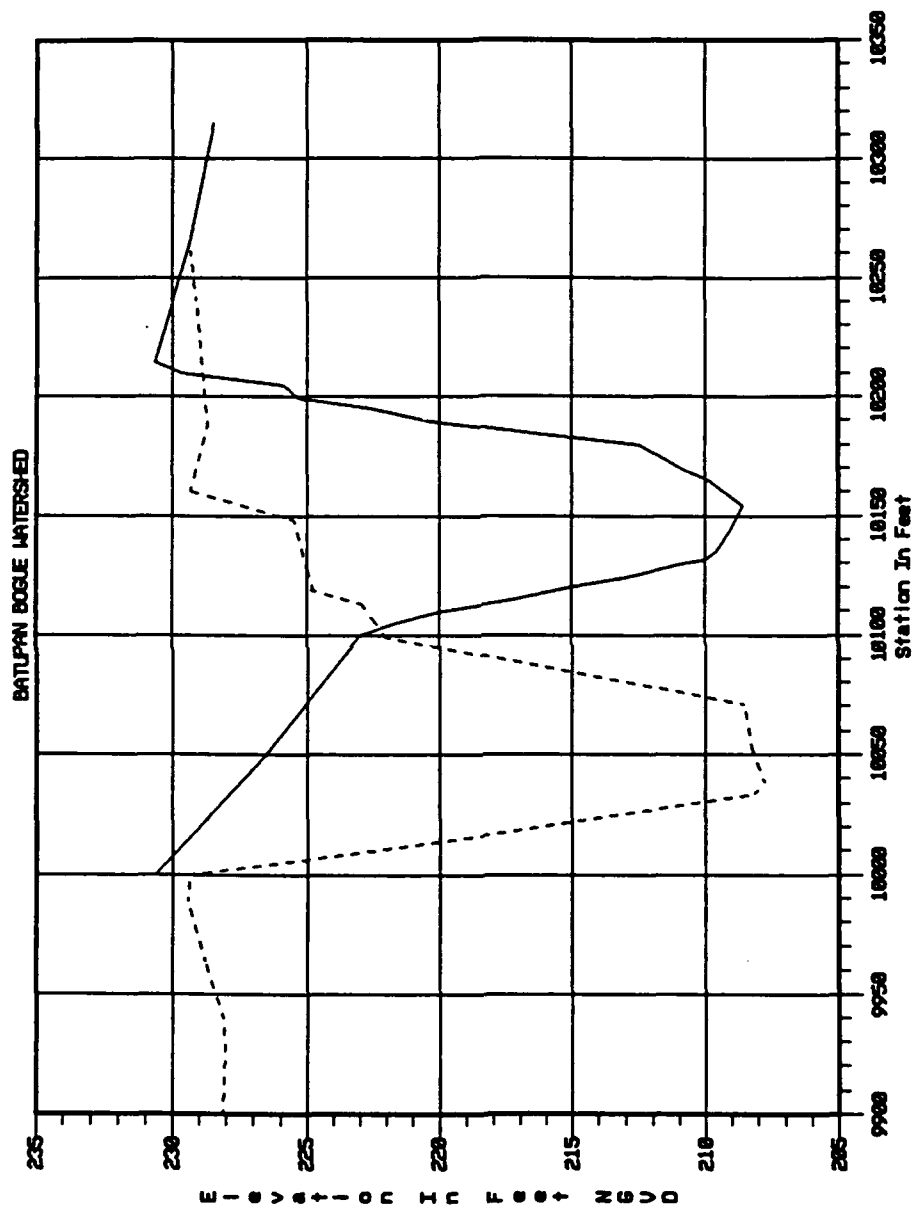
The 1985 and 1991 cross sections were surveyed at different locations.

BATUPAN BOGLE WATERSHED



——— LITTLE BOGLE 1985 XSEC 178.72
 - - - - - LITTLE BOGLE 1991 XSEC 191.37

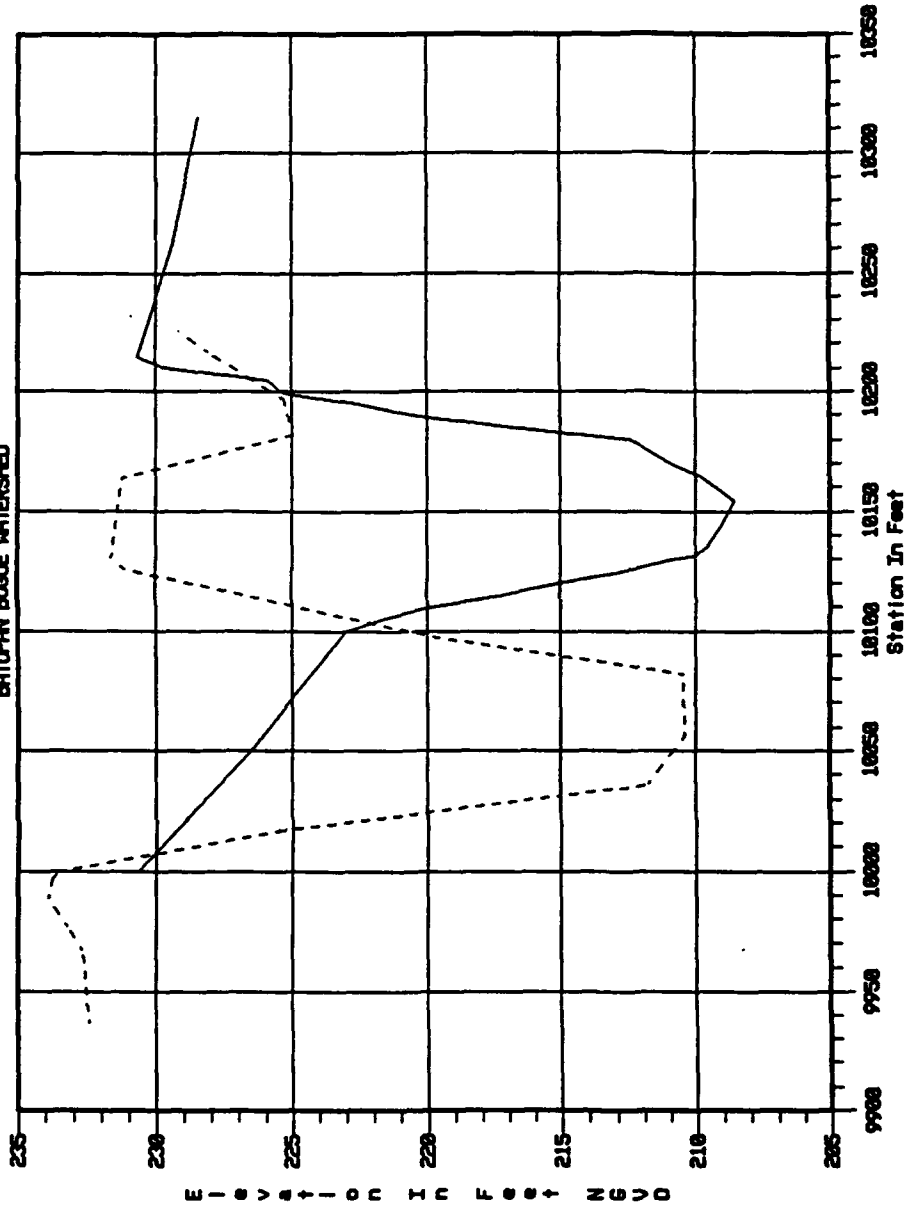
The 1985 and 1991 cross sections were surveyed at different locations.



— LITTLE BOGLE 1985 XSEC 283.04
 - - - LITTLE BOGLE 1991 XSEC 191.37

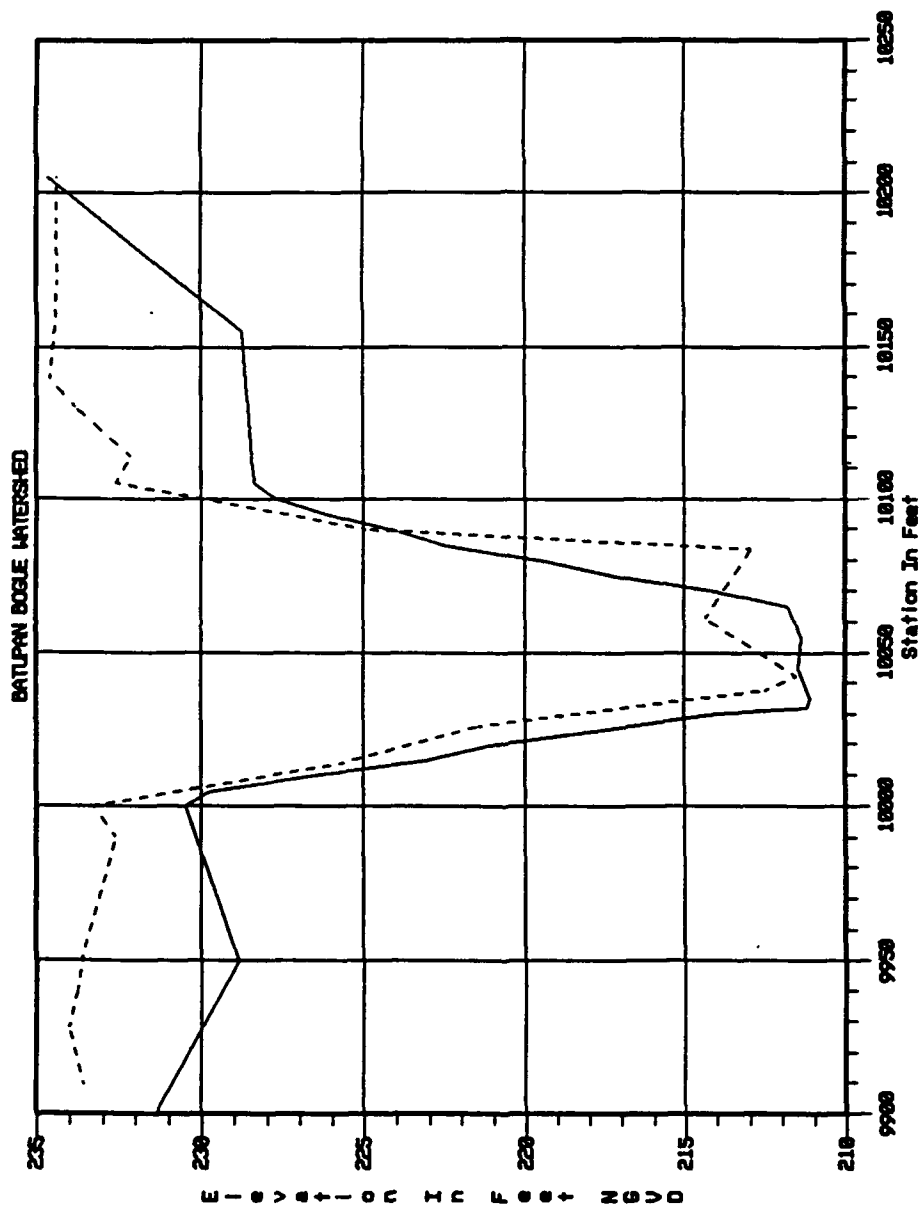
The 1985 and 1991 cross sections were surveyed at different locations.

BATUPAN BOGLE WATERSHED



— LITTLE BOGLE 1985 XSEC 283.84
 - - - LITTLE BOGLE 1991 XSEC 228.67

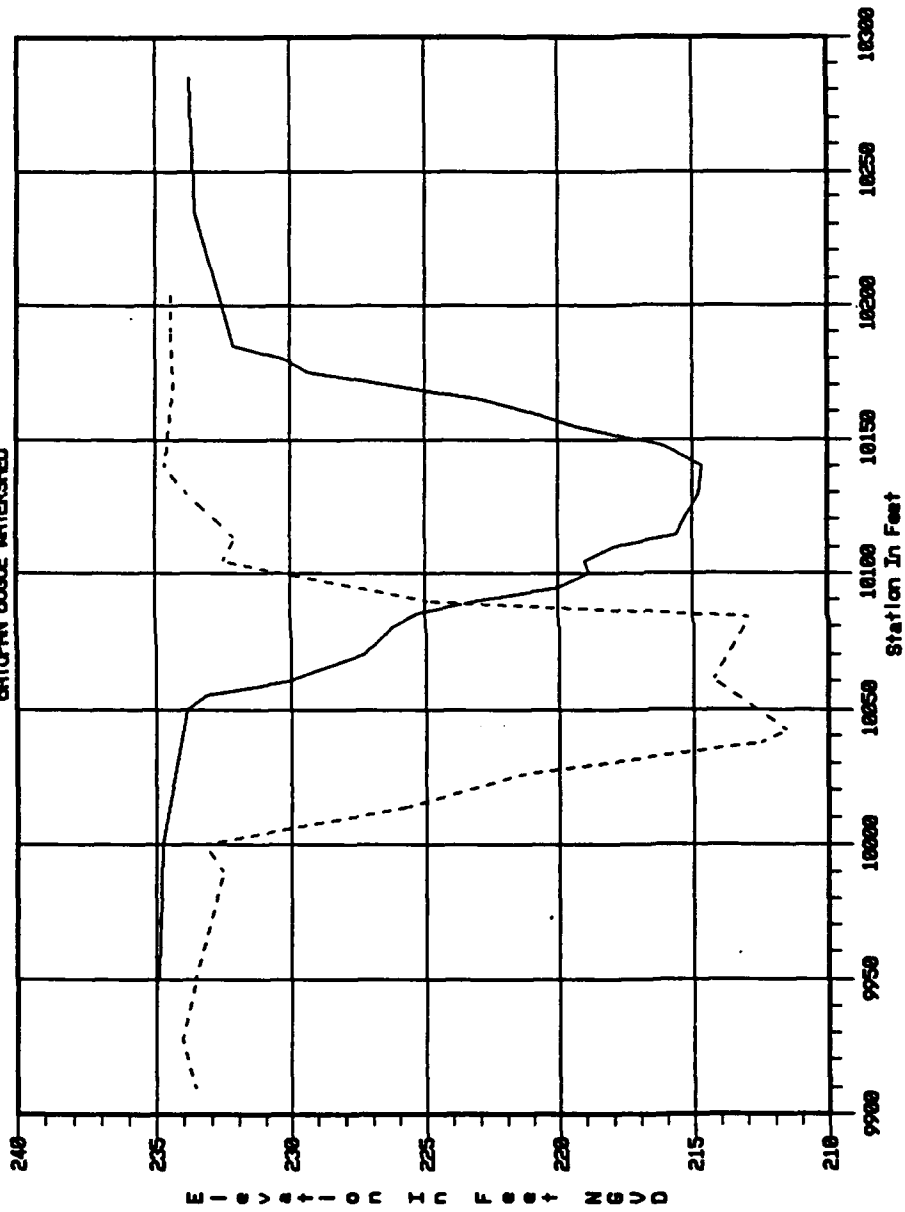
The 1985 and 1991 cross sections were surveyed at different locations.



— LITTLE BOGLE 1985 XSEC 230.00
 - - - LITTLE BOGLE 1991 XSEC 247.42

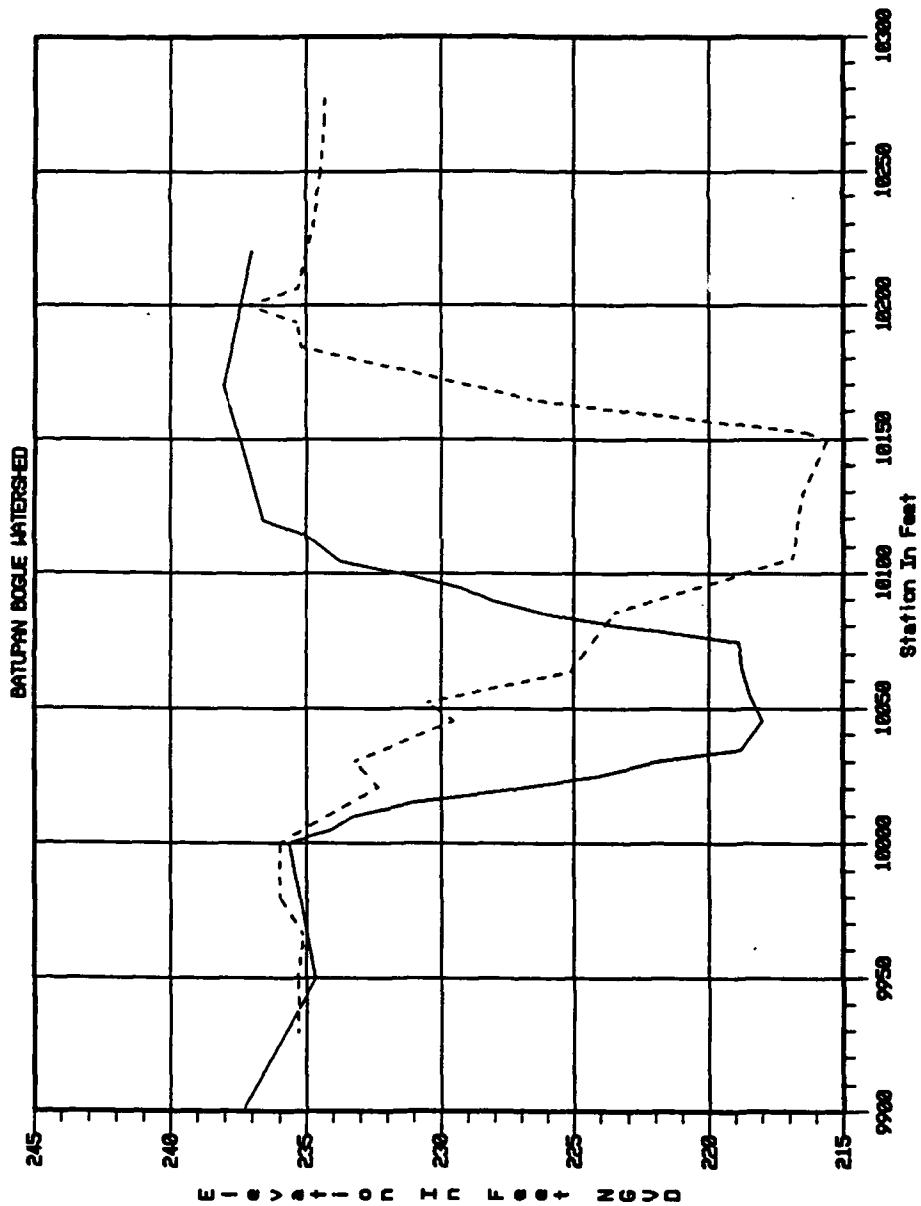
The 1985 and 1991 cross sections were surveyed at different locations.

BATUPAN BOGLE WATERSHED



——— LITTLE BOGLE 1985 XSEC 259.94
 - - - - - LITTLE BOGLE 1991 XSEC 247.42

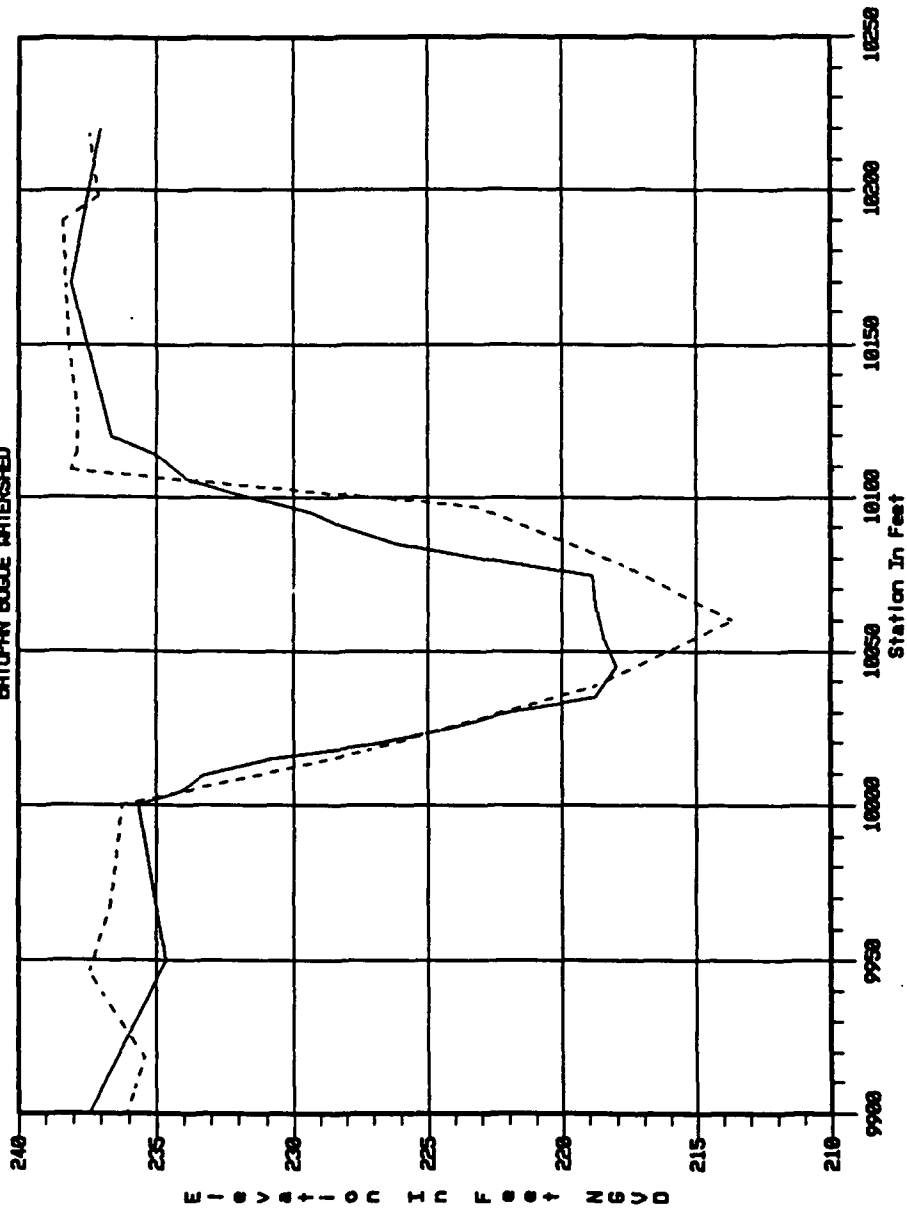
The 1985 and 1991 cross sections were surveyed at different locations.



——— LITTLE BOGLE 1985 XSEC 287.84
 - - - LITTLE BOGLE 1991 XSEC 274.32

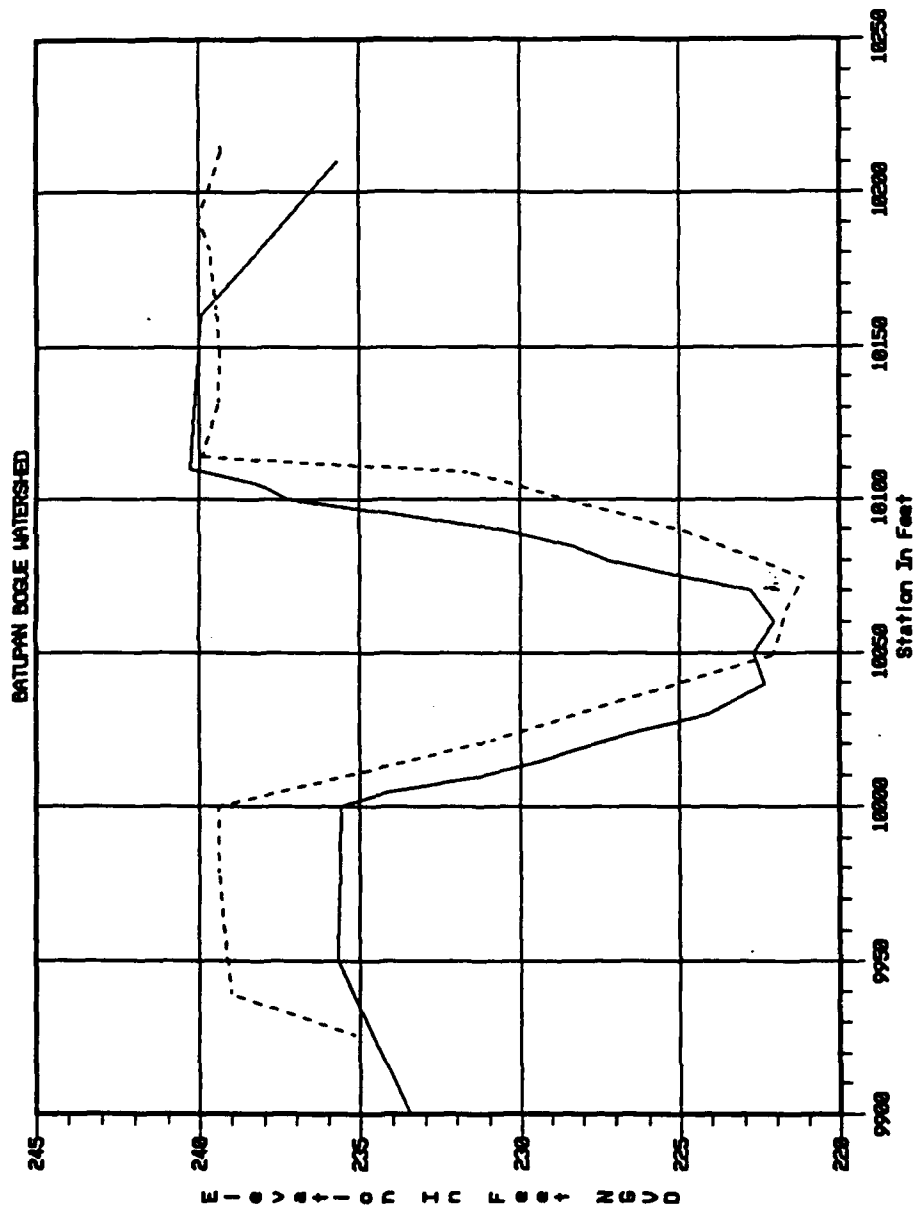
The 1985 and 1991 cross sections were surveyed at different locations.

BATUPAN BOGLE INTERSECT



— LITTLE BOGLE 1985 XSEC 287.04
 - - - LITTLE BOGLE 1991 XSEC 299.28

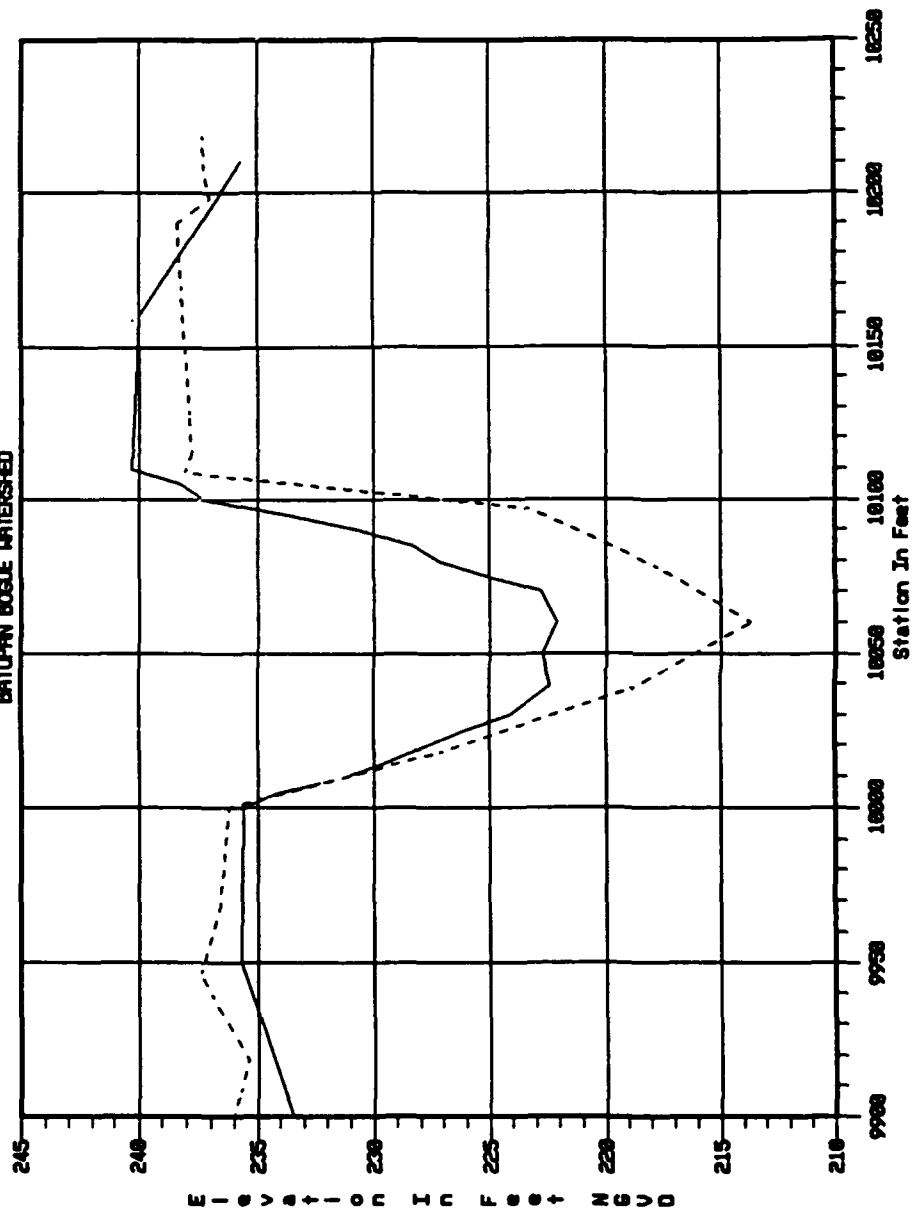
The 1985 and 1991 cross sections were surveyed at different locations.



———— LITTLE BOGLE 1985 XSEC 318.00
 - - - - - LITTLE BOGLE 1991 XSEC 328.35

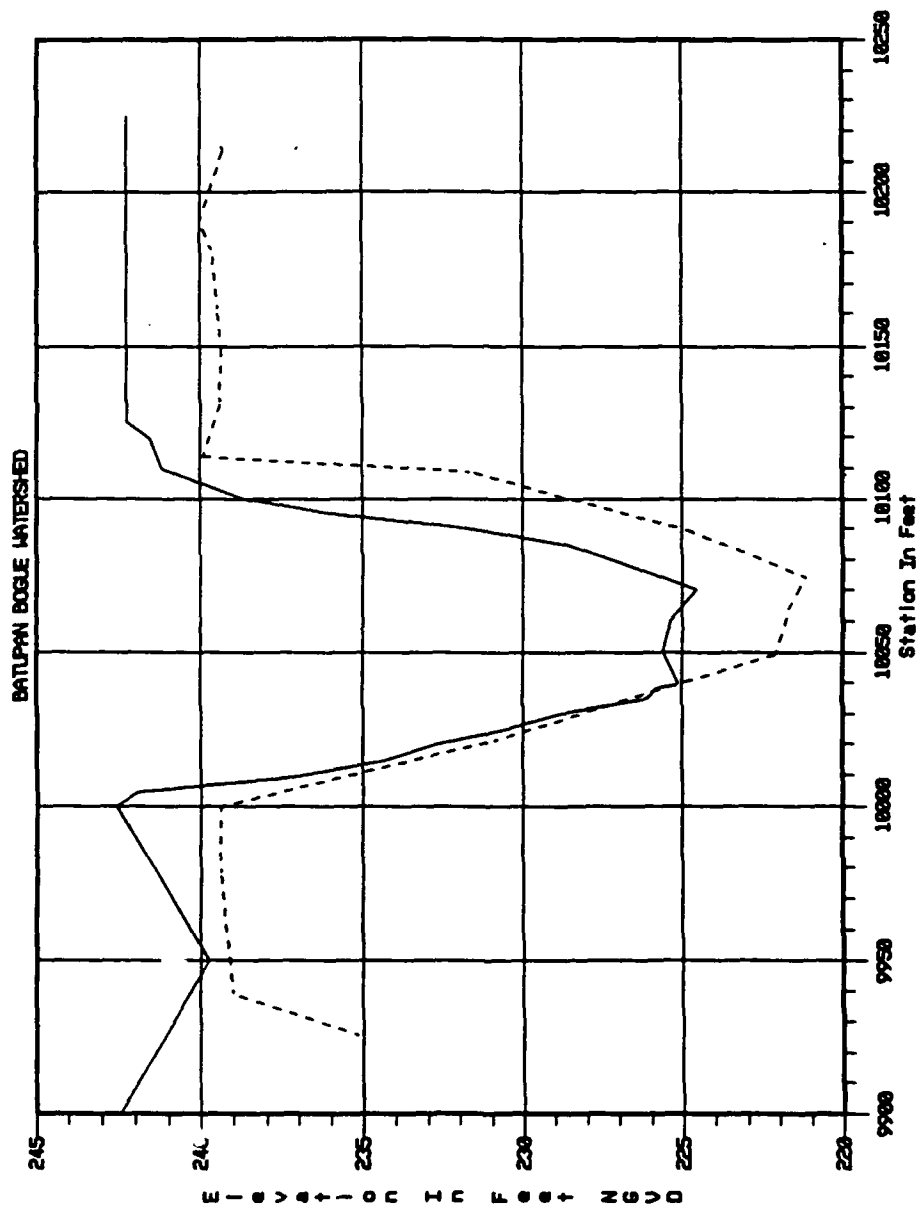
The 1985 and 1991 cross sections were surveyed at different locations.

BATUPAN BOGLE WATERSHED



——— LITTLE BOGLE 1985 XSEC 318.86
 - - - - - LITTLE BOGLE 1991 XSEC 299.28

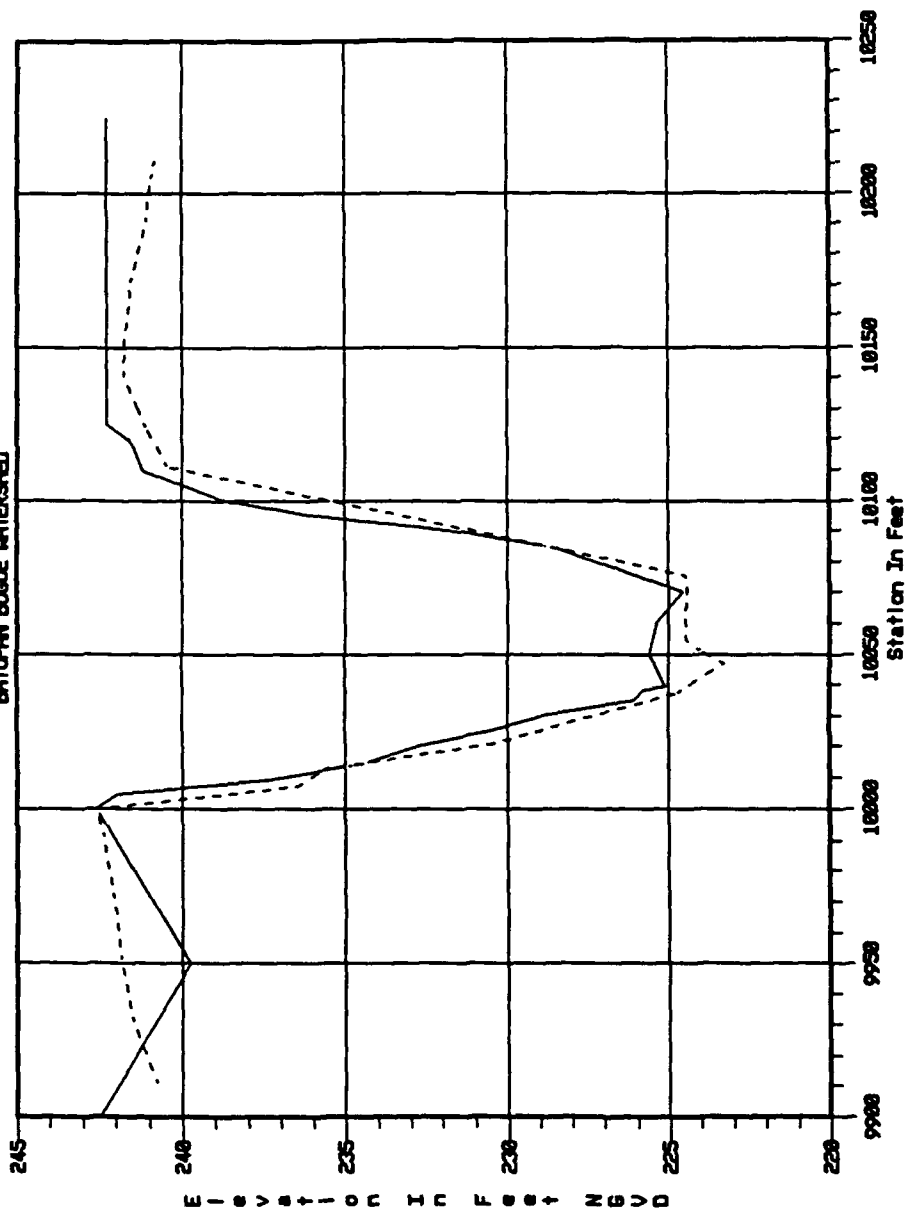
The 1985 and 1991 cross sections were surveyed at different locations.



———— LITTLE BOGLE 1985 XSEC 343.08
 - - - - - LITTLE BOGLE 1991 XSEC 326.35

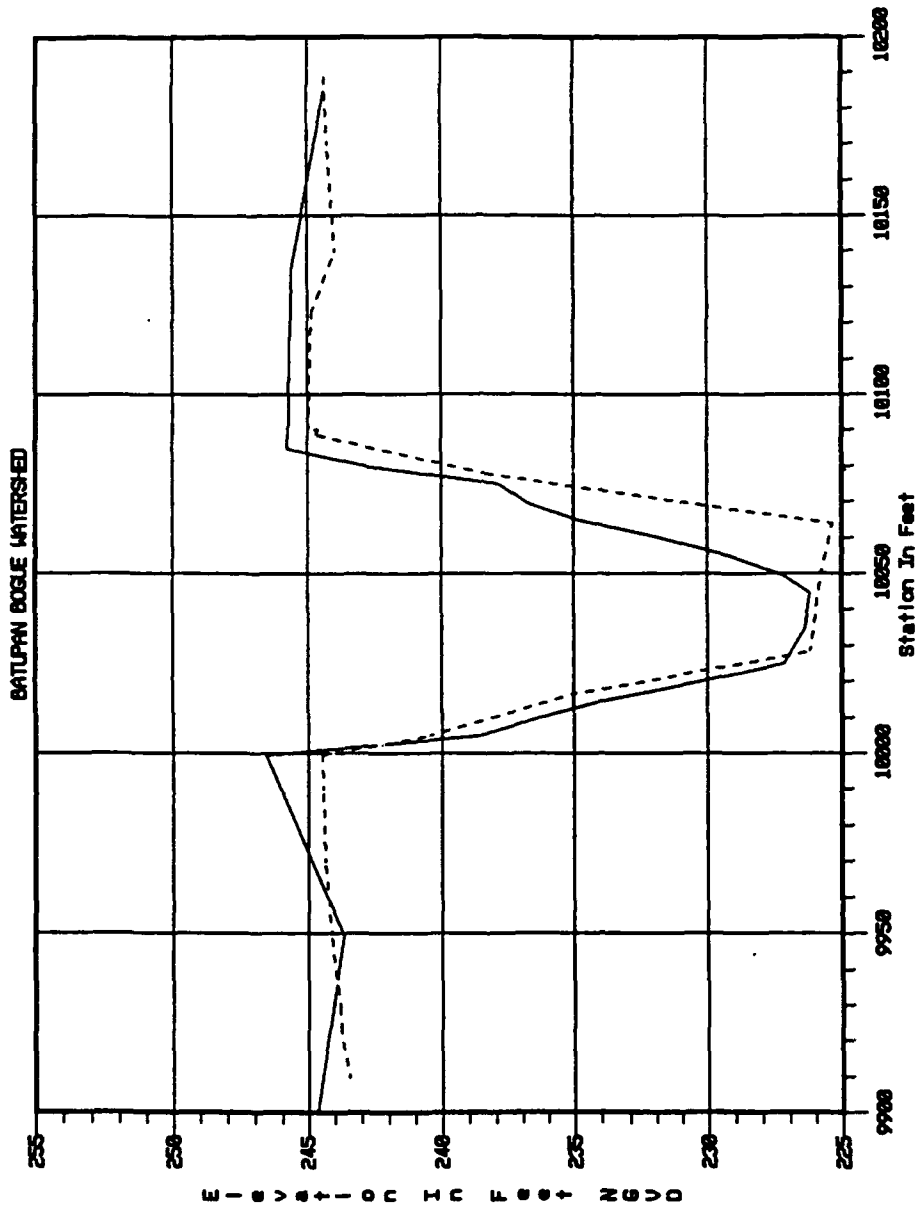
The 1985 and 1991 cross sections were surveyed at different locations.

BATUPAN BOGLE WATERSHED



———— LITTLE BOGLE 1985 XSEC 343.88
 - - - - - LITTLE BOGLE 1991 XSEC 349.82

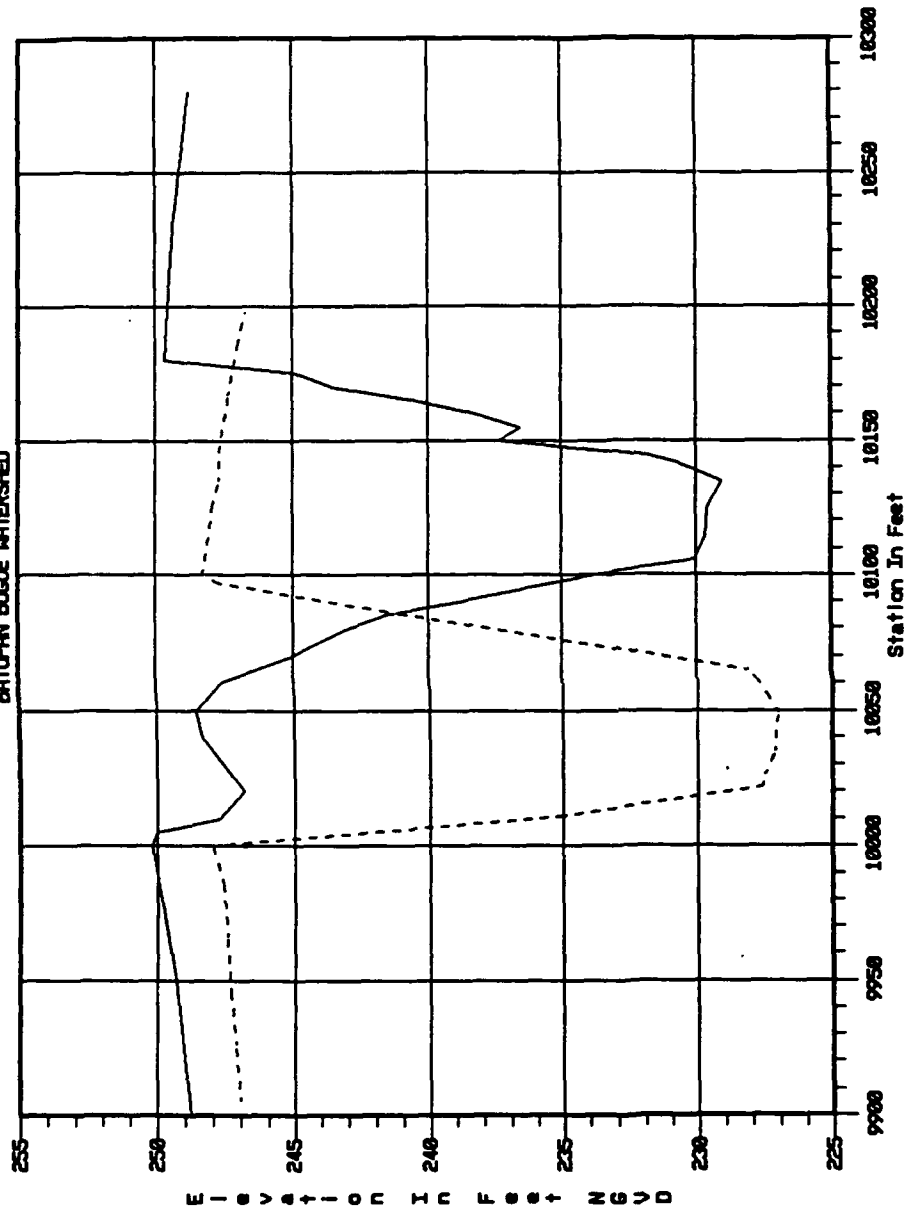
The 1985 and 1991 cross sections were surveyed at different locations.



——— LITTLE BOGLE 1985 XSEC 370.00
 - - - LITTLE BOGLE 1991 XSEC 375.00

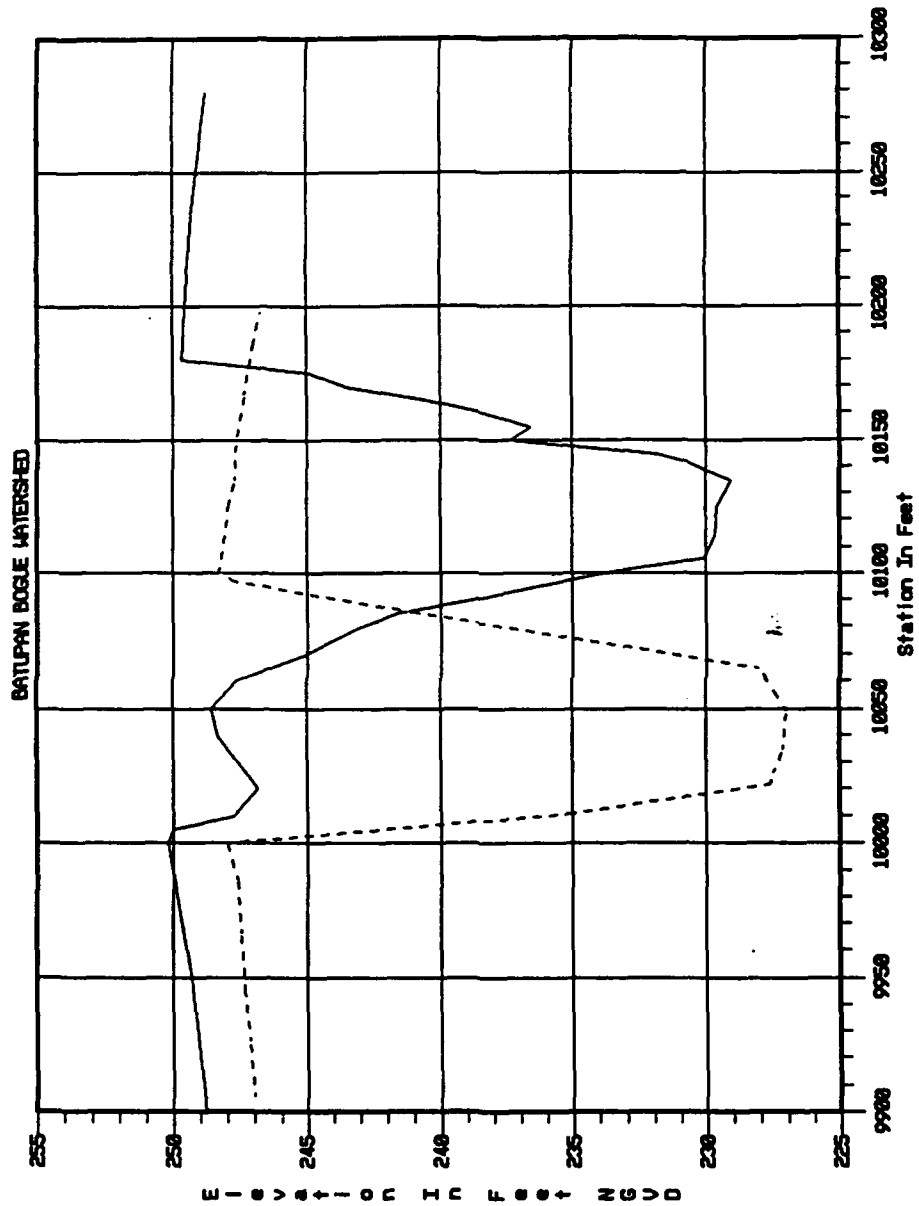
The 1985 and 1991 cross sections were surveyed at different locations.

BATUPAN BOGLE WATERSHED



———— LITTLE BOGLE 1985 XSEC 397.10
 - - - - - LITTLE BOGLE 1991 XSEC 401.00

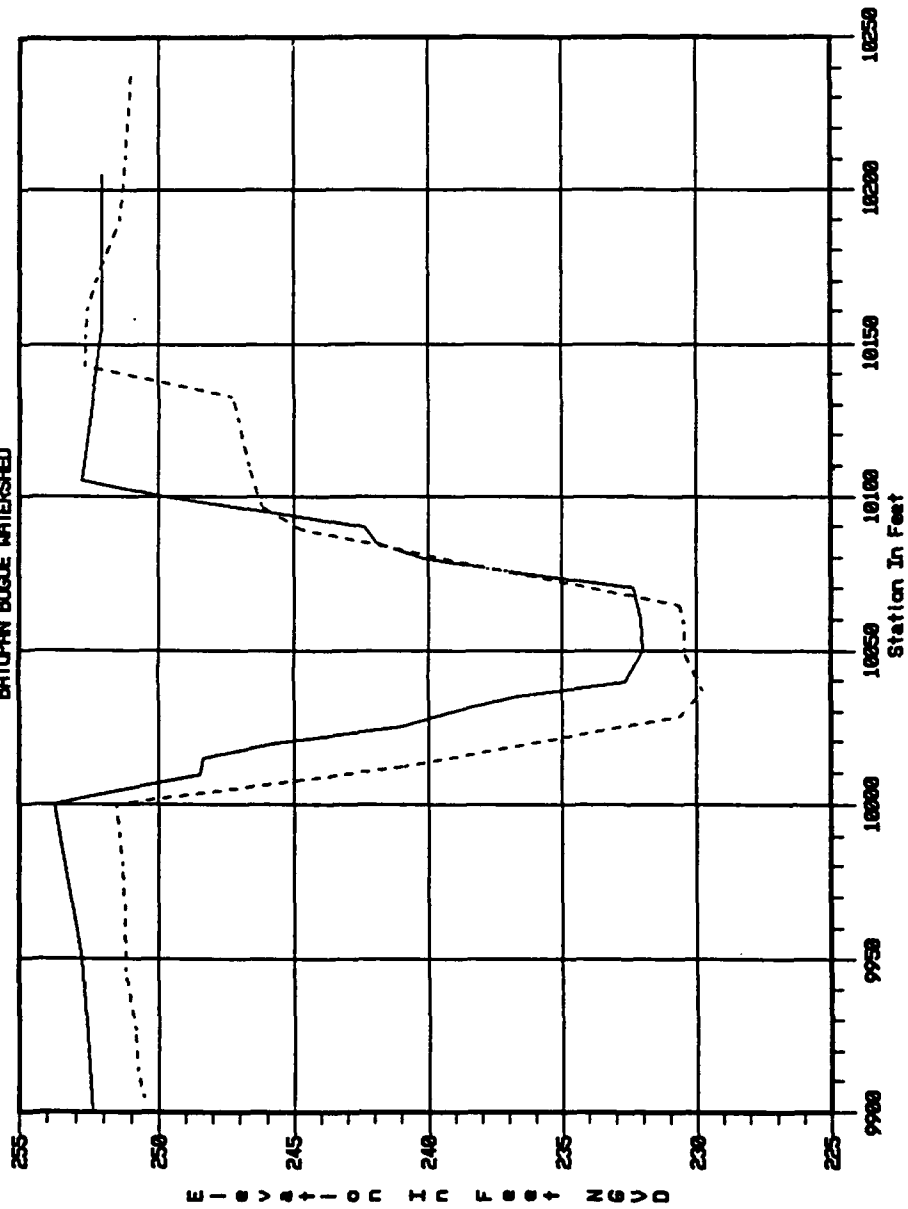
The 1985 and 1991 cross sections were surveyed at different locations.



———— LITTLE BOGLE 1985 XSEC 409.9
 - - - - - LITTLE BOGLE 1991 XSEC 401.00

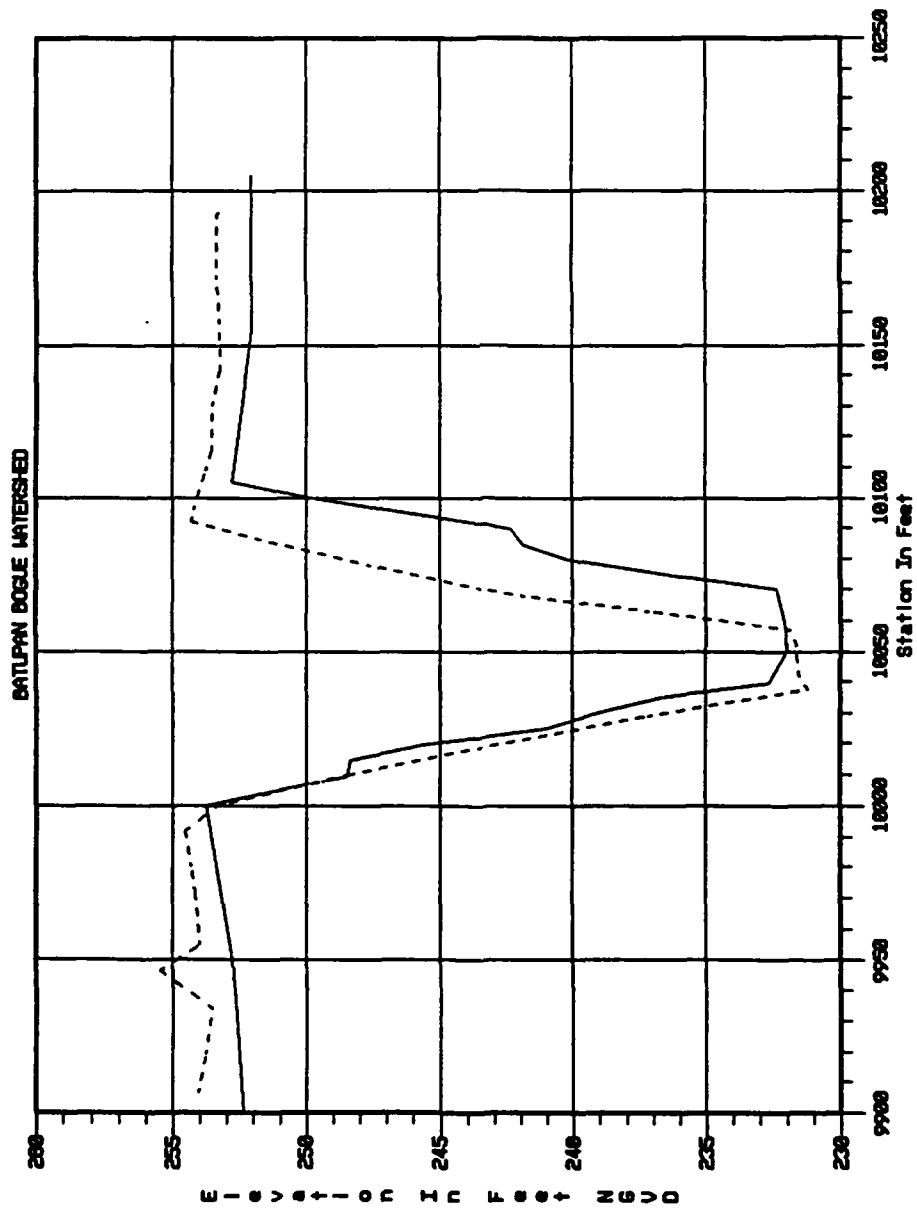
The 1985 and 1991 cross sections were surveyed at different locations.

BATUPAN BOGLE WATERSHED



——— LITTLE BOGLE 1985 XSEC 425.00
 - - - - - LITTLE BOGLE 1991 XSEC 427.05

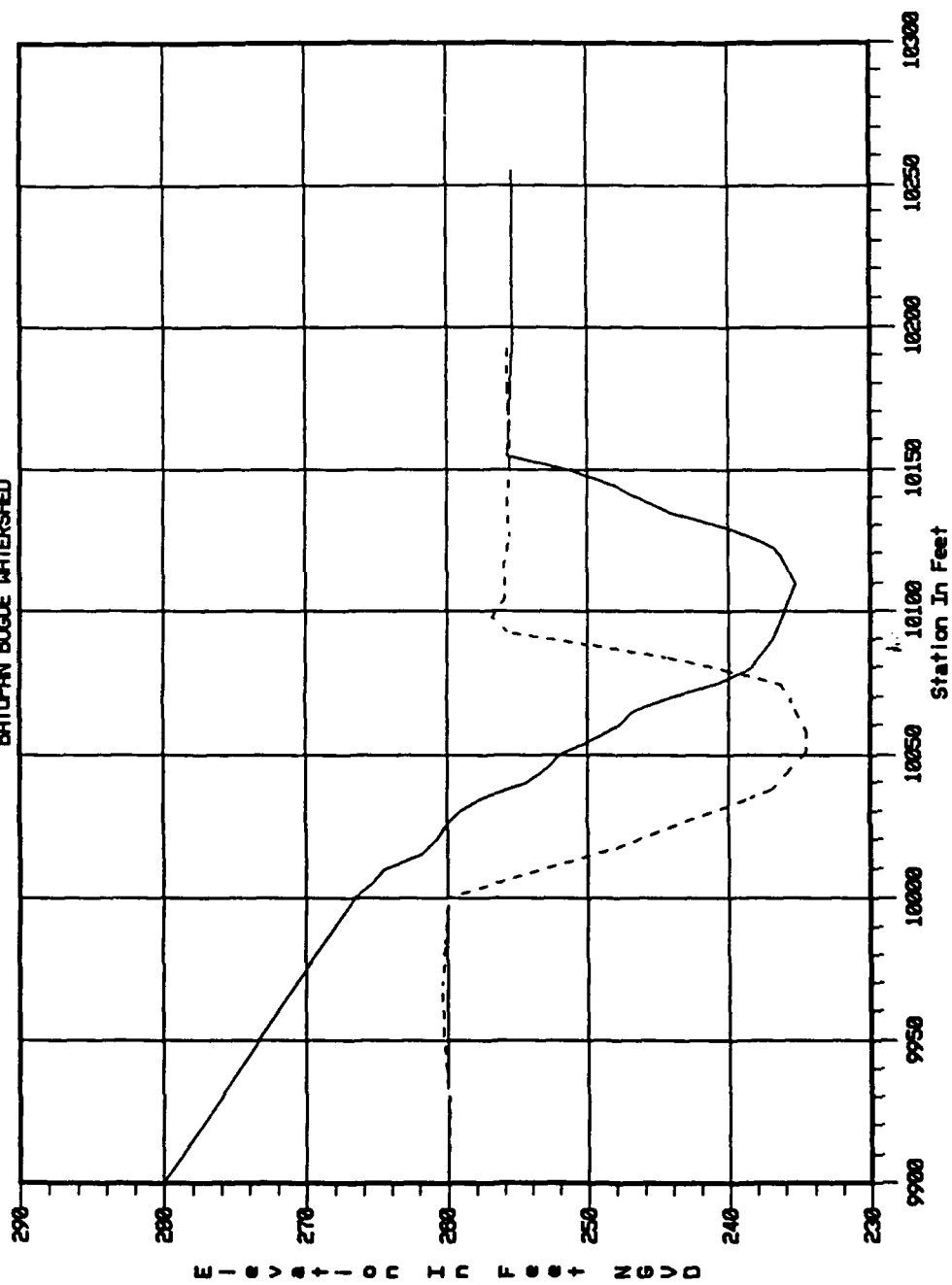
The 1985 and 1991 cross sections were surveyed at different locations.



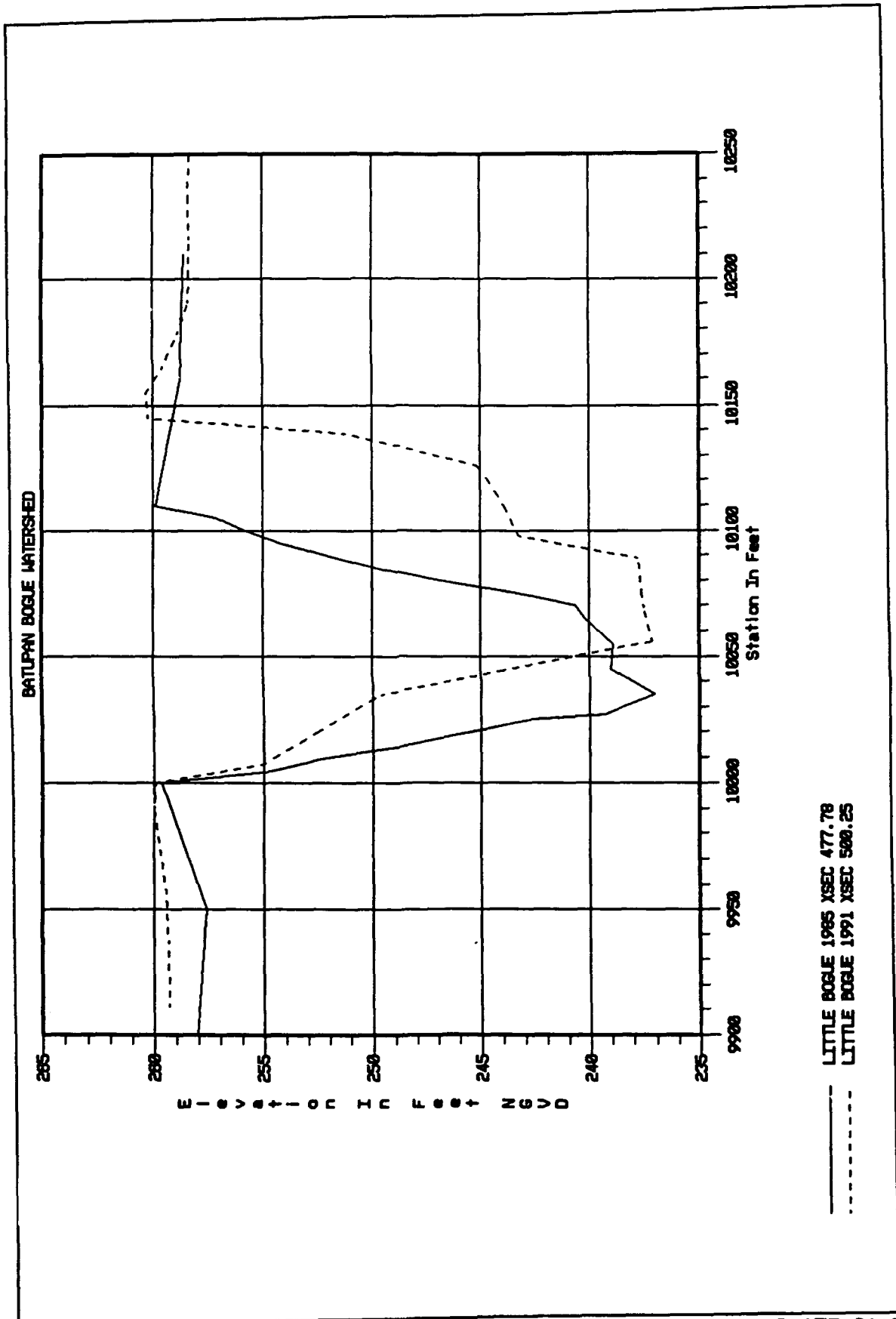
— LITTLE BOGLE 1985 XSEC 425.00
 - - - LITTLE BOGLE 1991 XSEC 449.39

The 1985 and 1991 cross sections were surveyed at different locations.

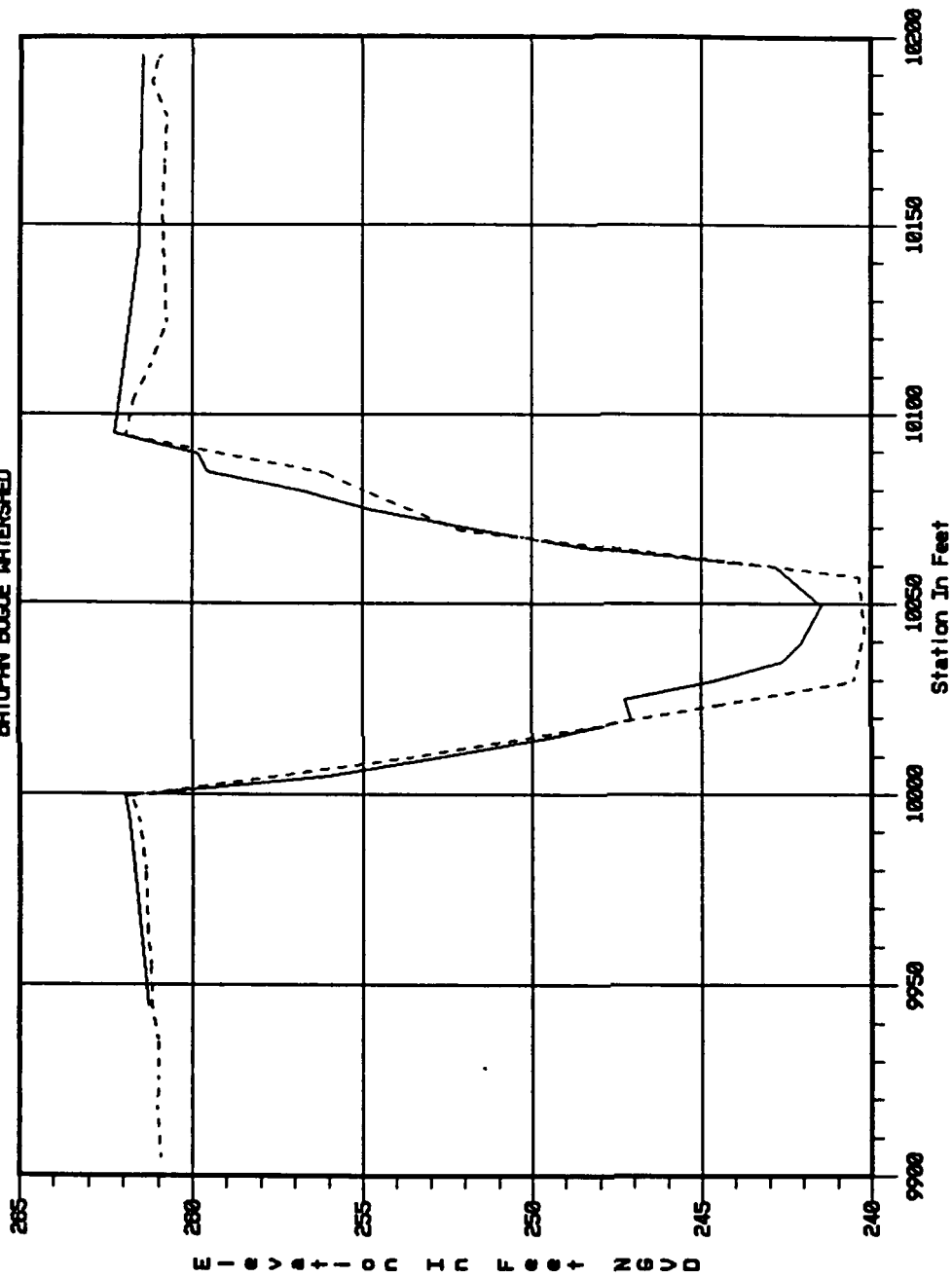
BATUPAN BOGJE WATERSHED



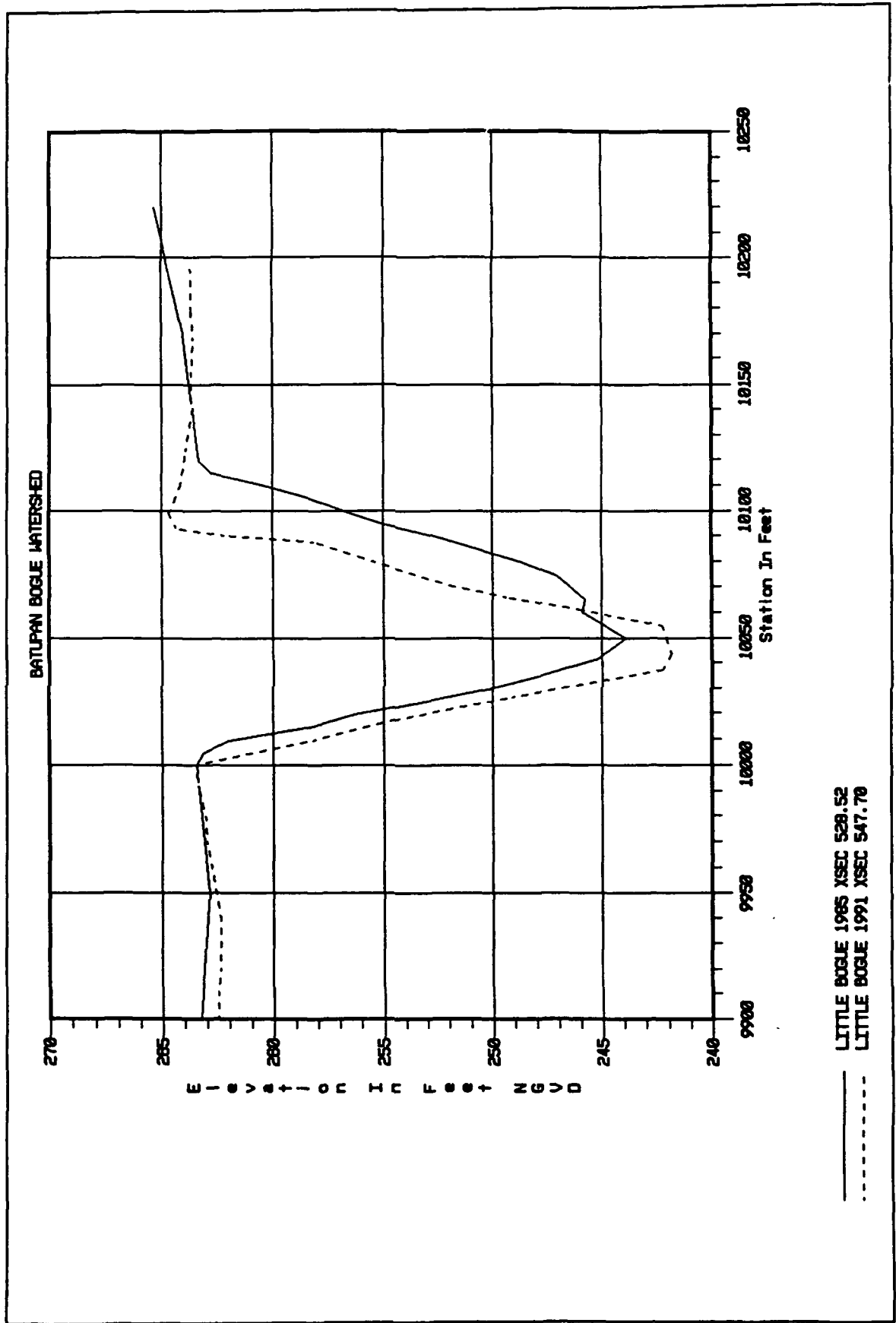
———— LITTLE BOGJE 1985 XSEC 451.78
 - - - - - LITTLE BOGJE 1991 XSEC 478.25

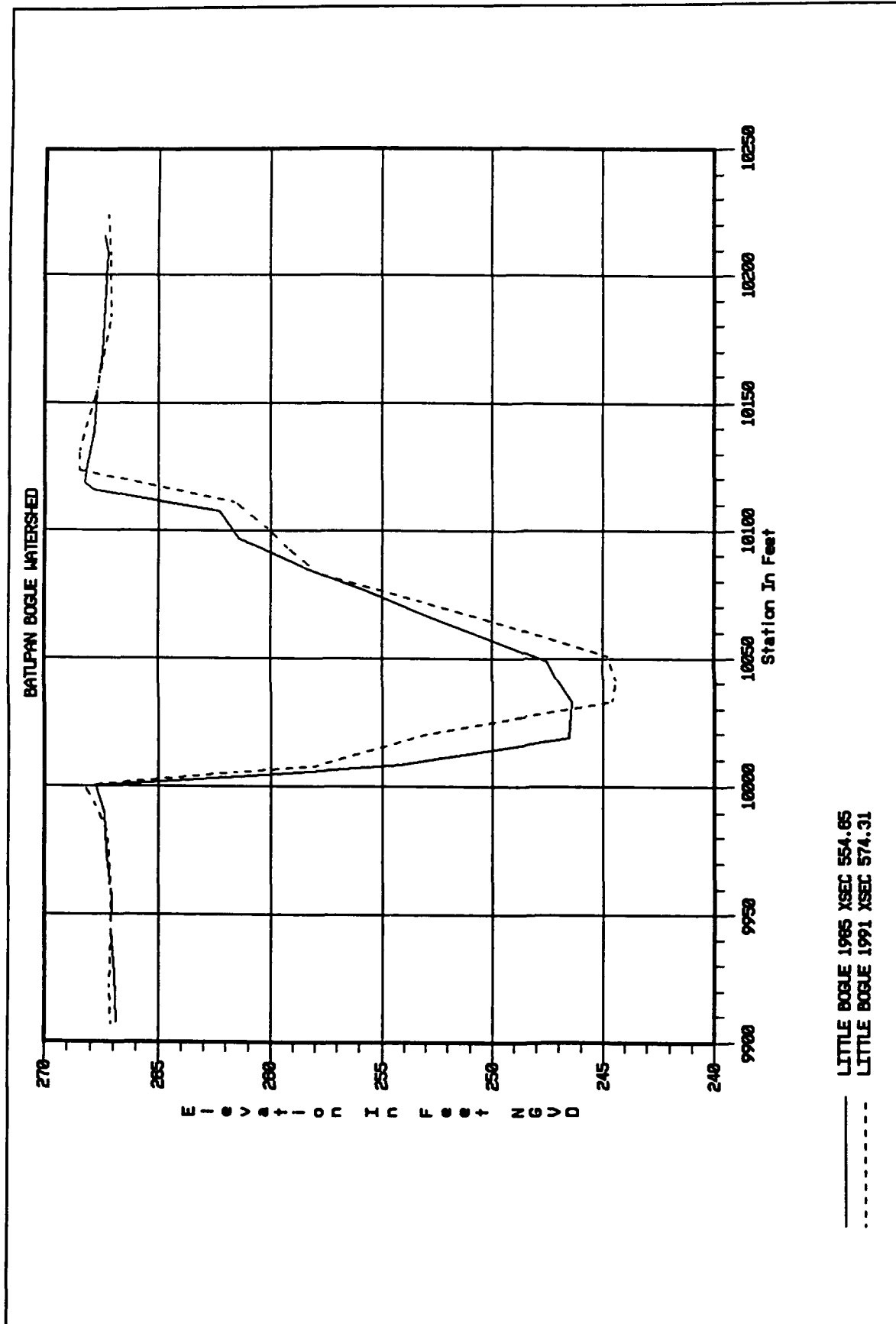


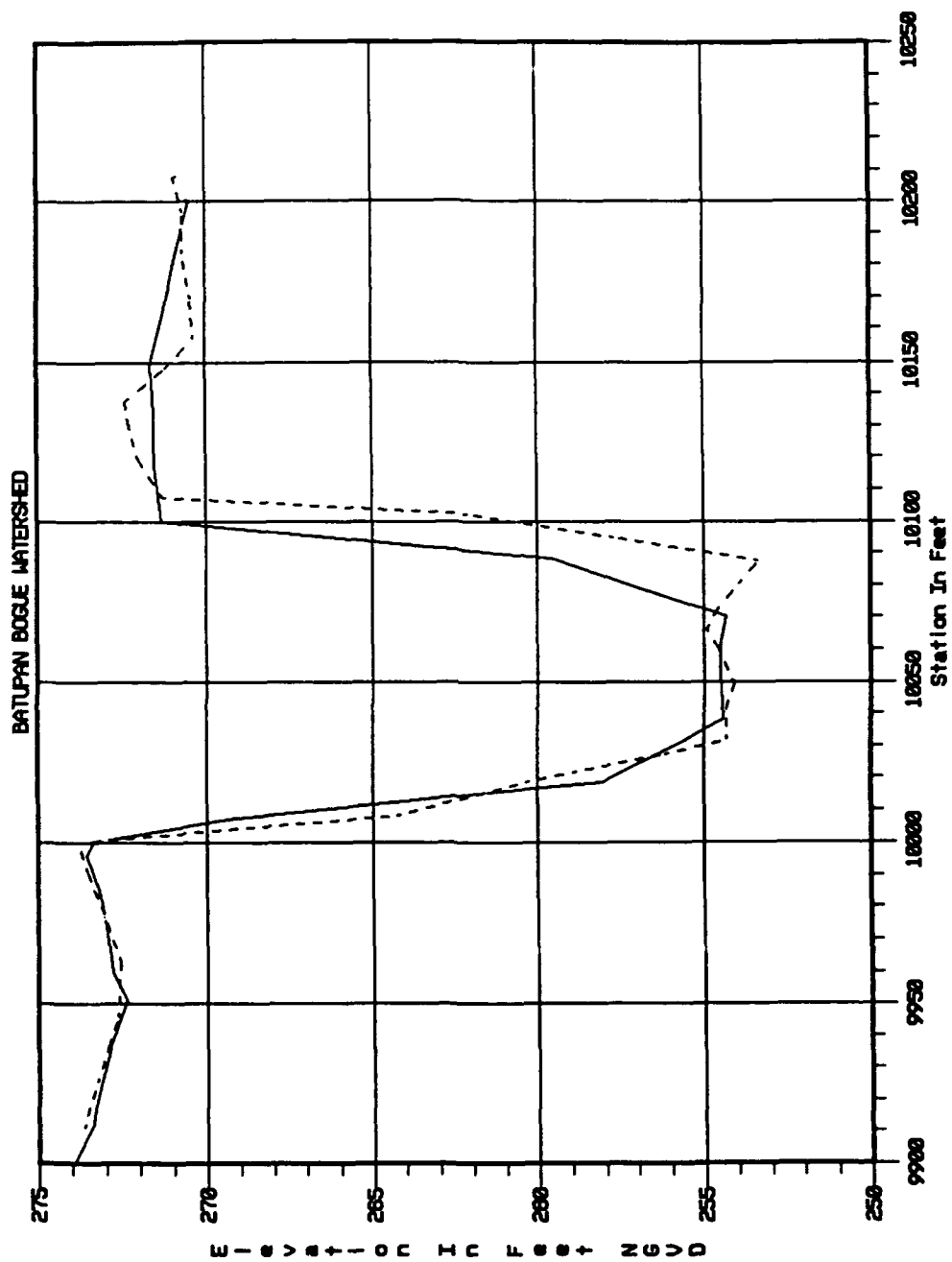
BATUPAN BOGLE WATERSHED



——— LITTLE BOGLE 1985 XSEC 508.00
 - - - - - LITTLE BOGLE 1991 XSEC 524.94







— LITTLE BOGUE 1985 XSEC 581.80
 - - - LITTLE BOGUE 1991 XSEC 881.28

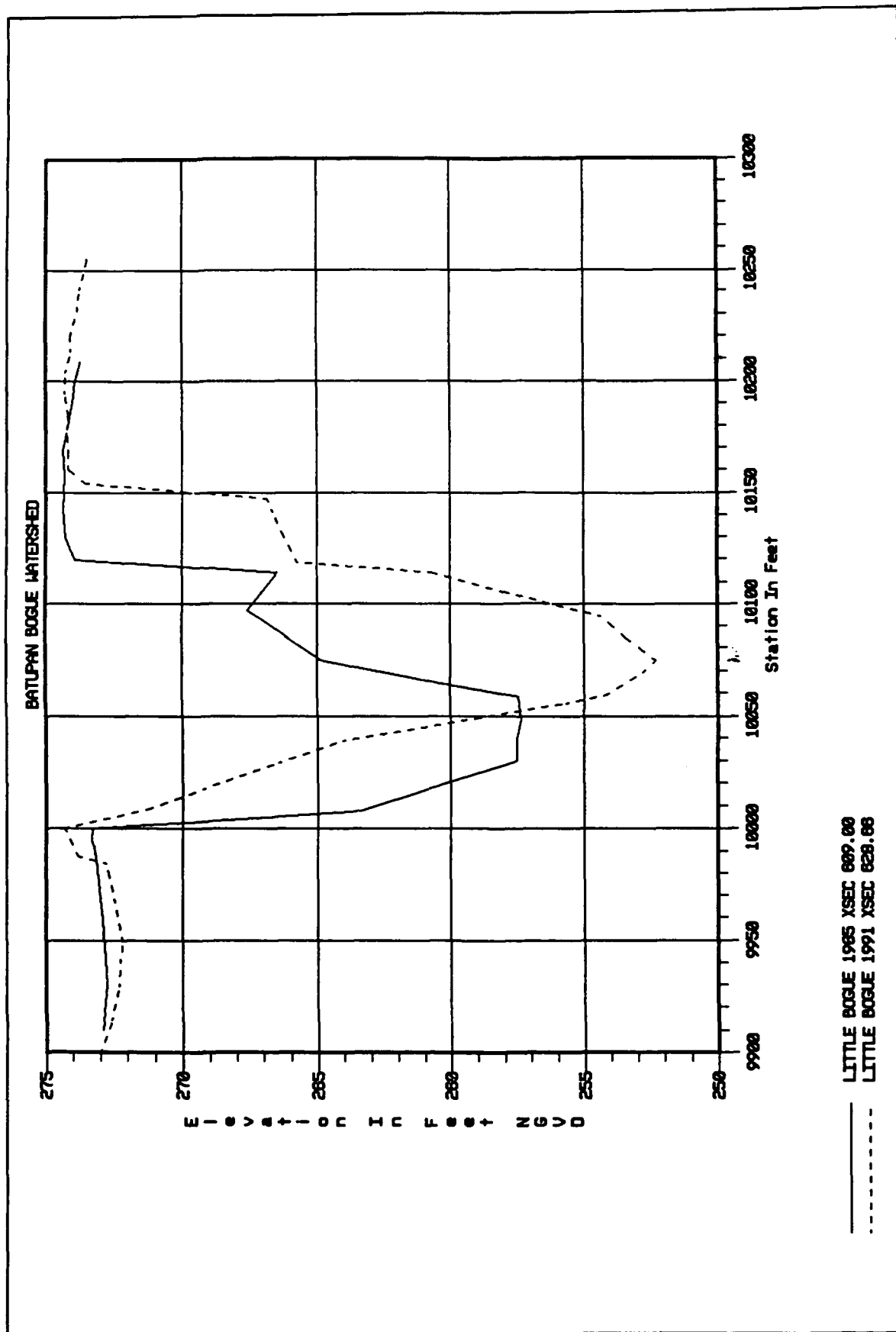
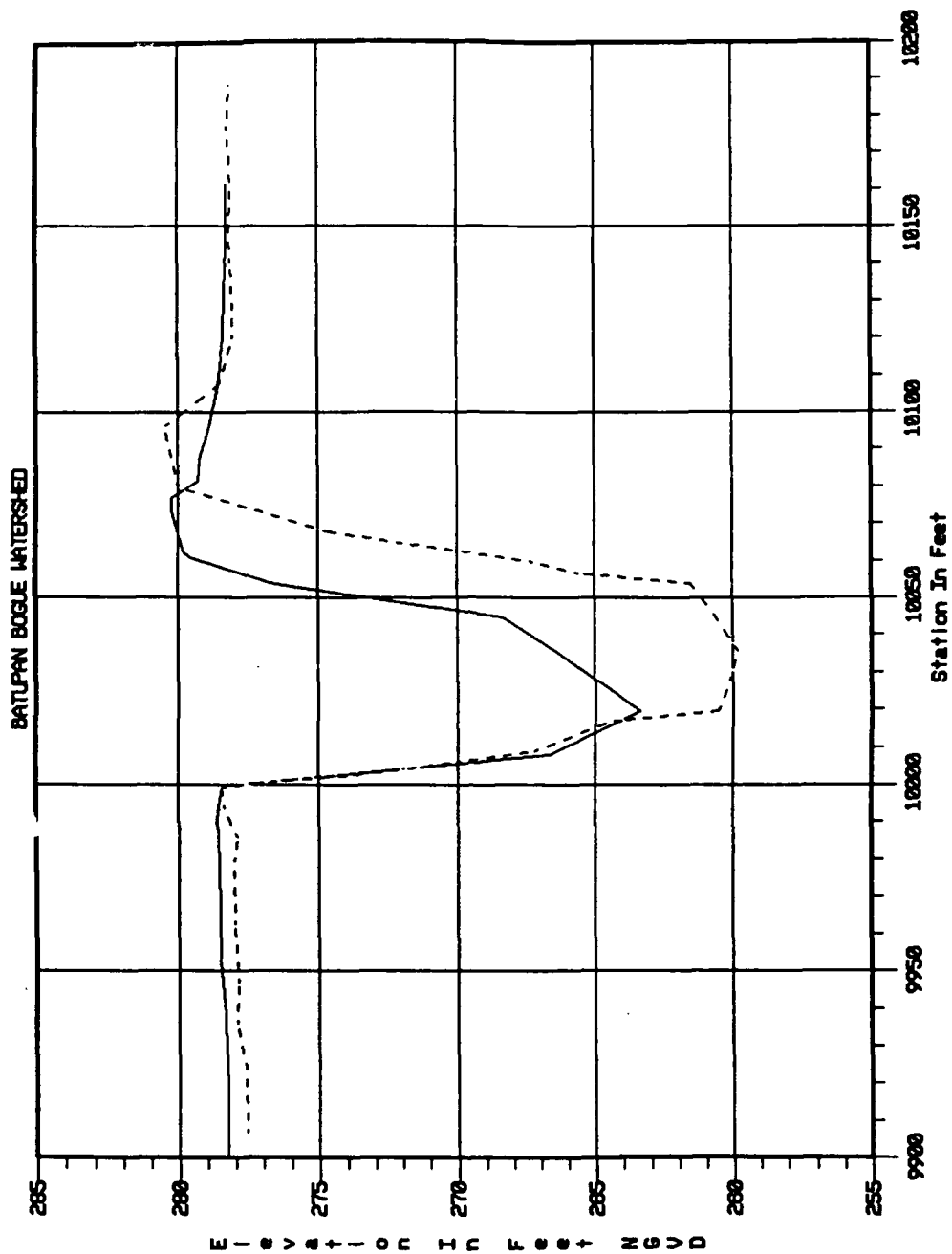
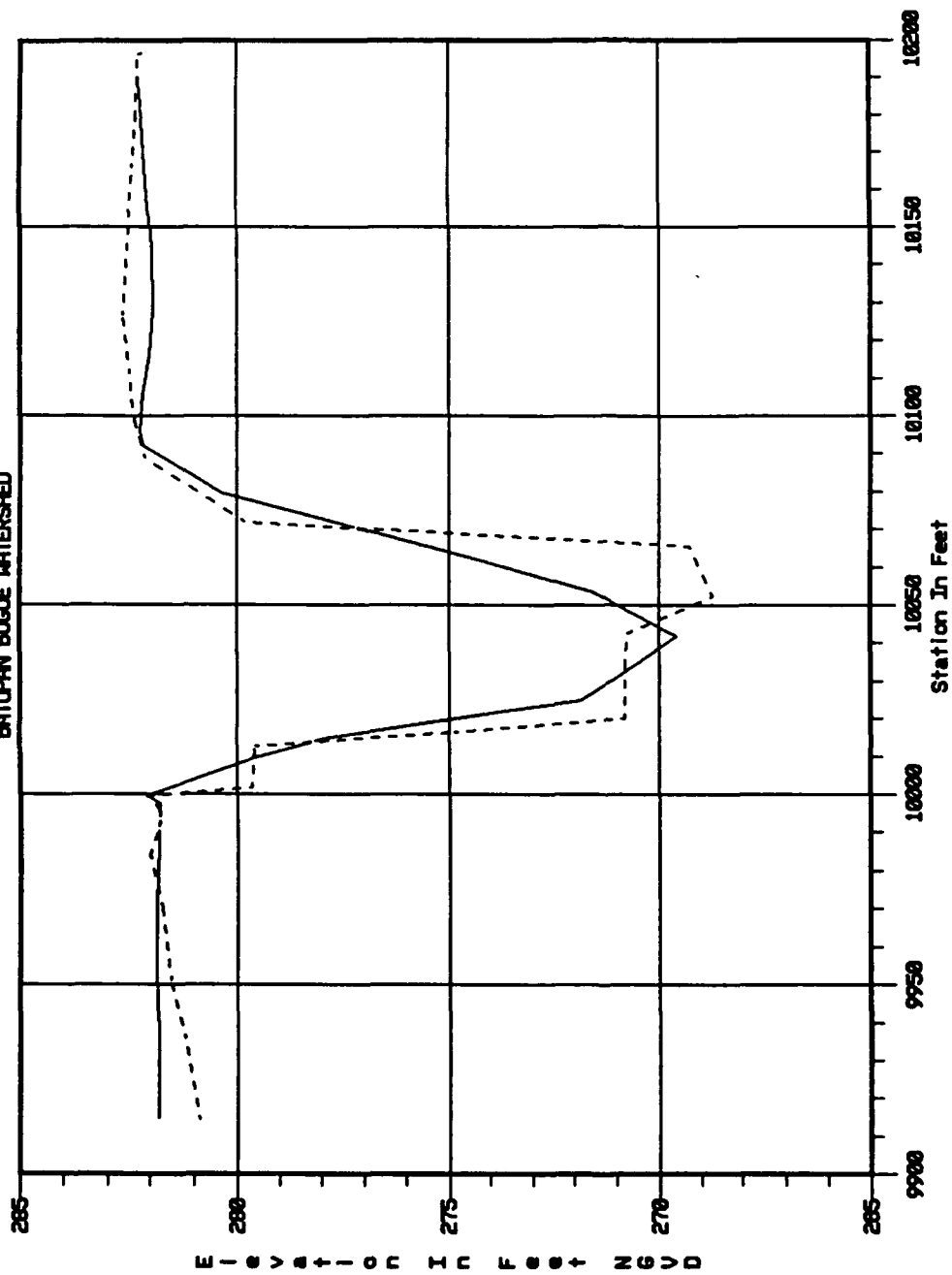


PLATE C224

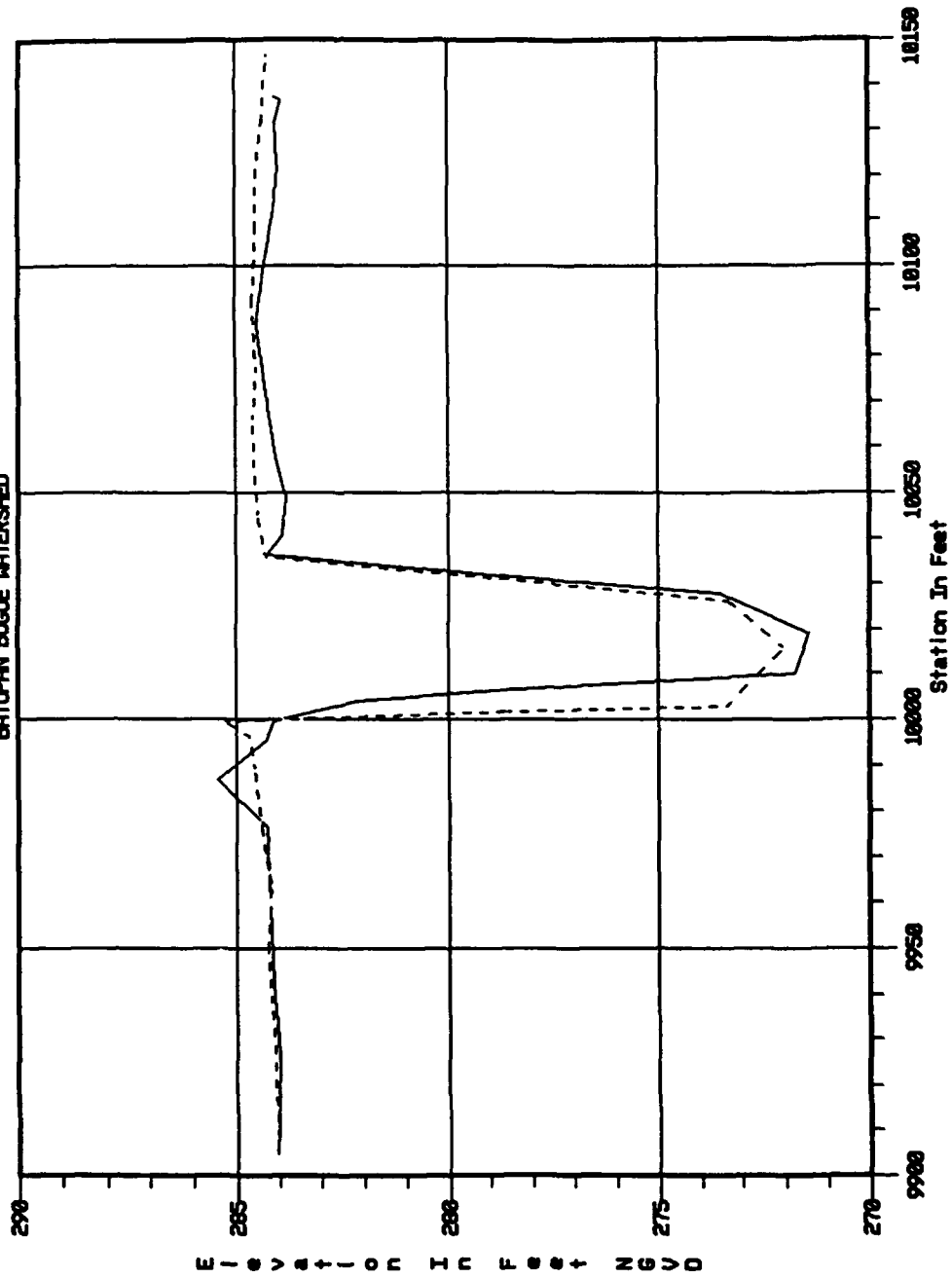


BATUPAN BOGLE WATERSHED



——— Little Bogle 1985 XSEC 879.30
 - - - Little Bogle 1991 XSEC 895.85

BATUPAN BOGUE WATERSHED



———— LITTLE BOGUE 1985 XSEC 789.90
 - - - - - LITTLE BOGUE 1991 XSEC 726.65

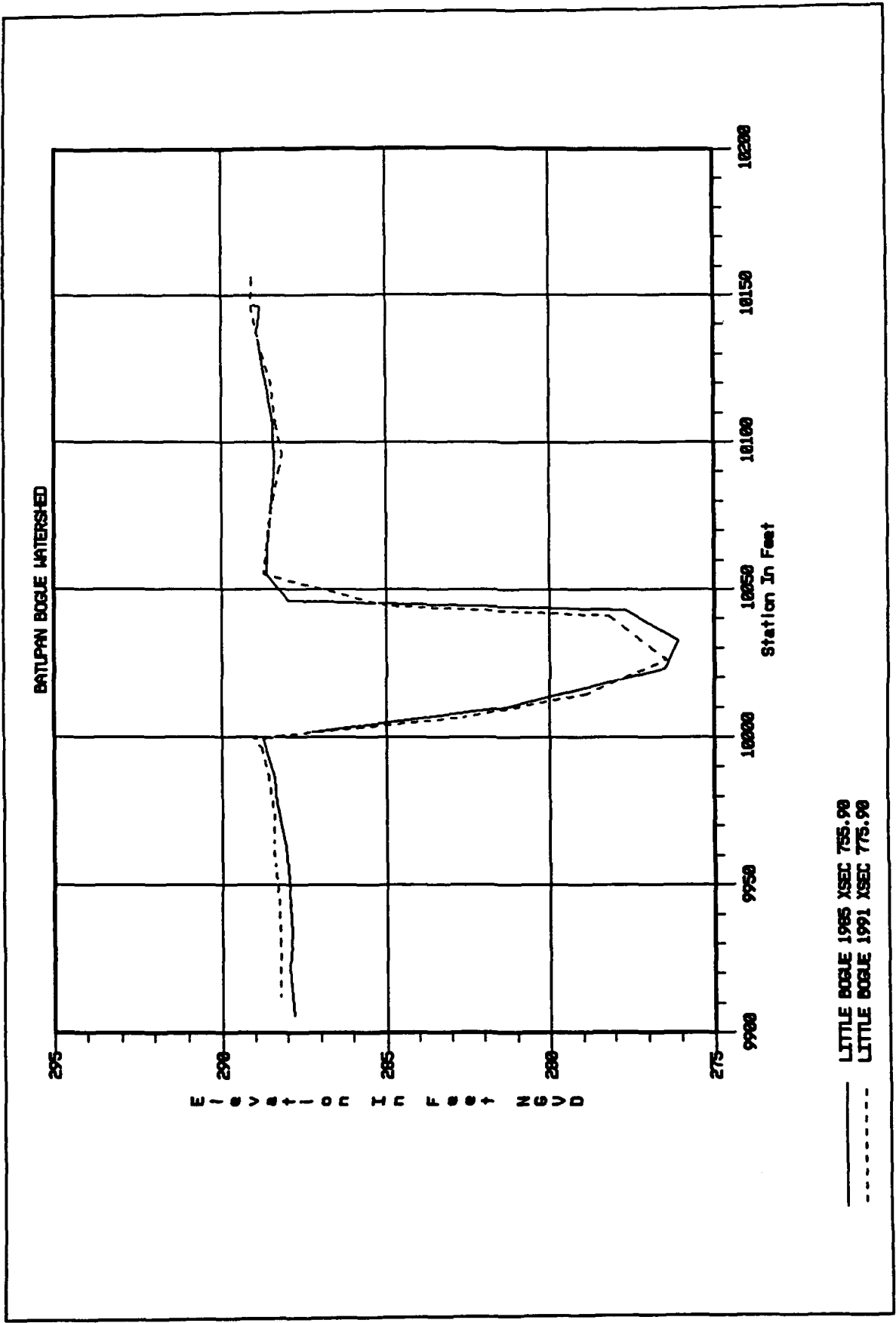
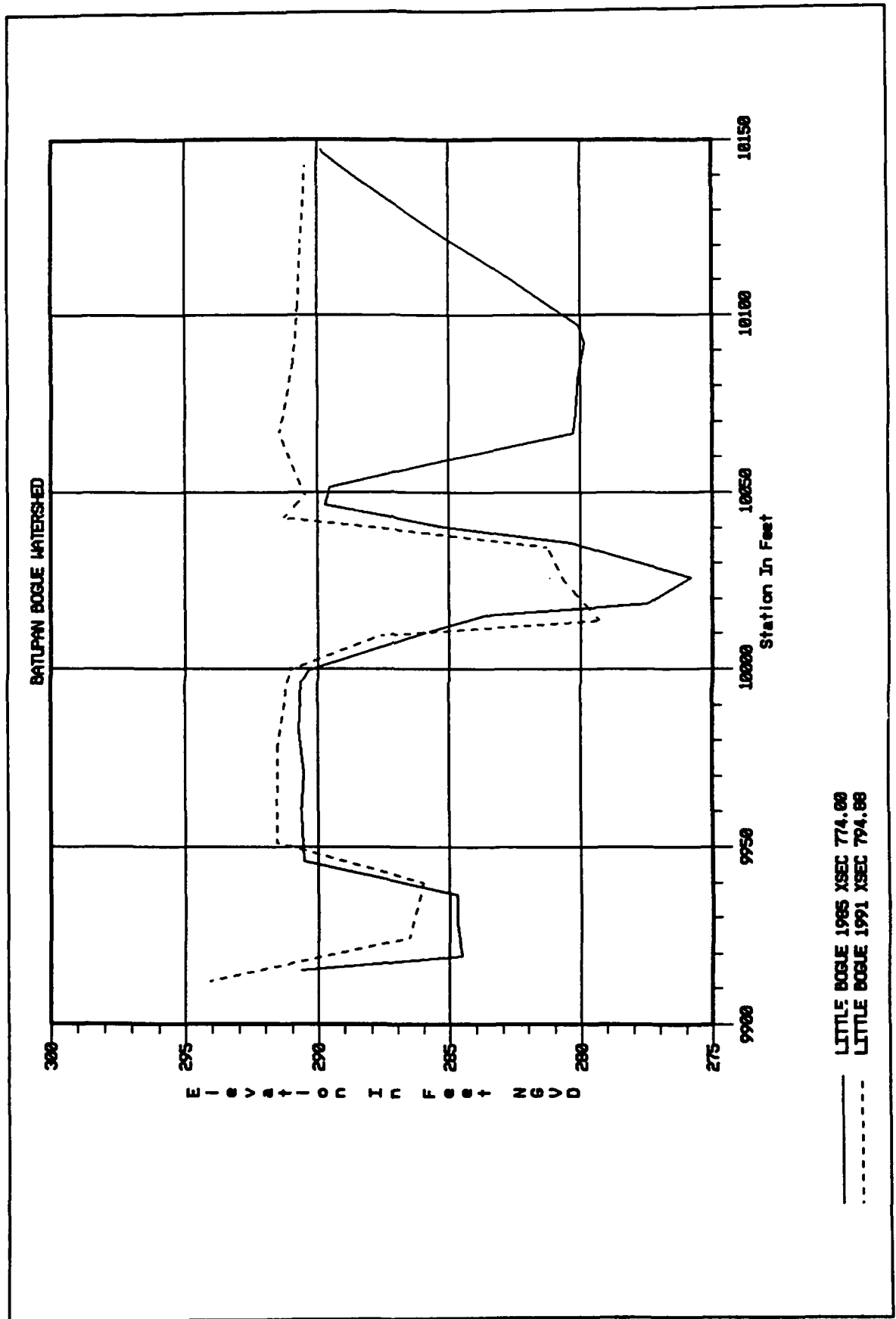
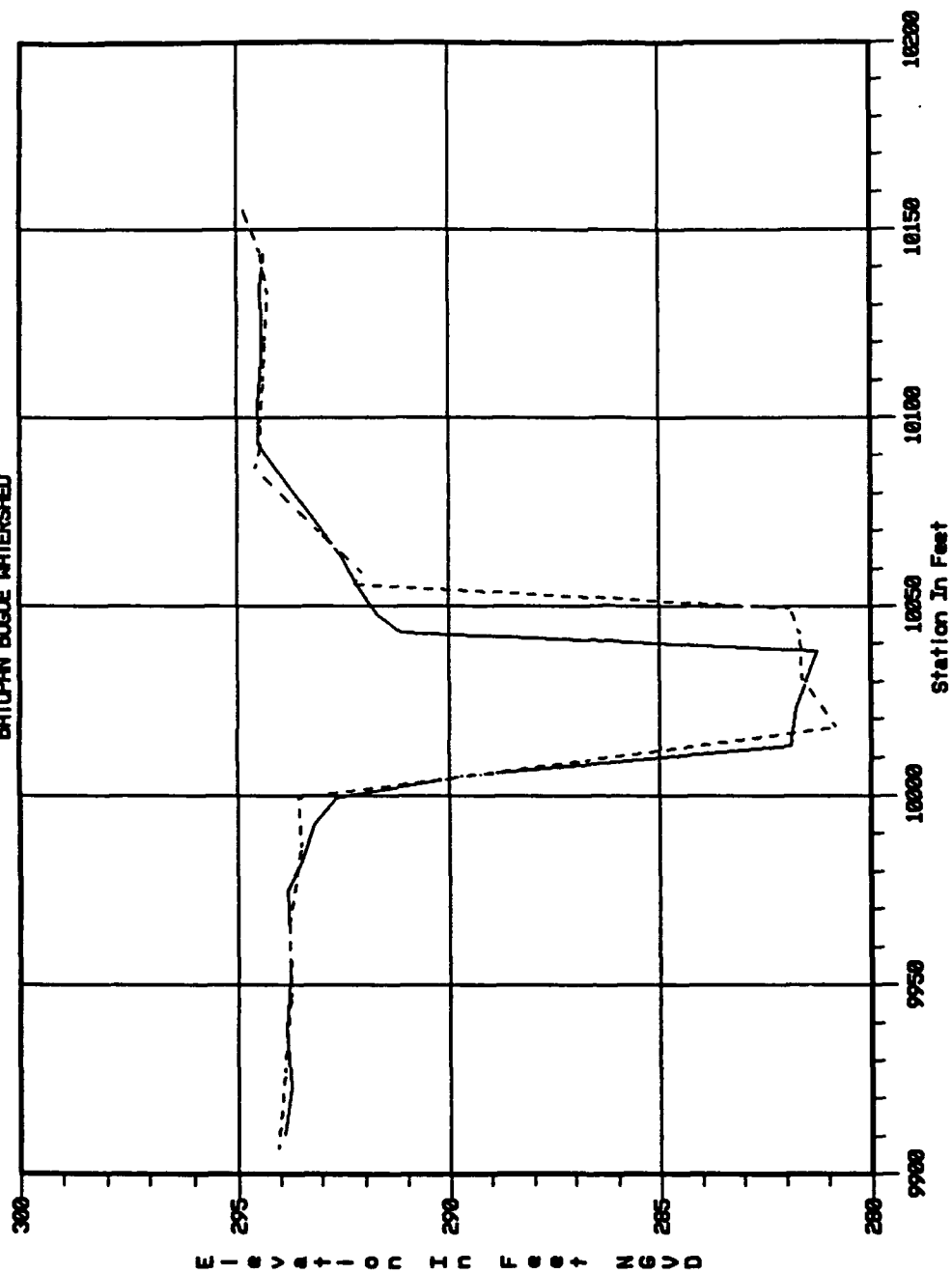


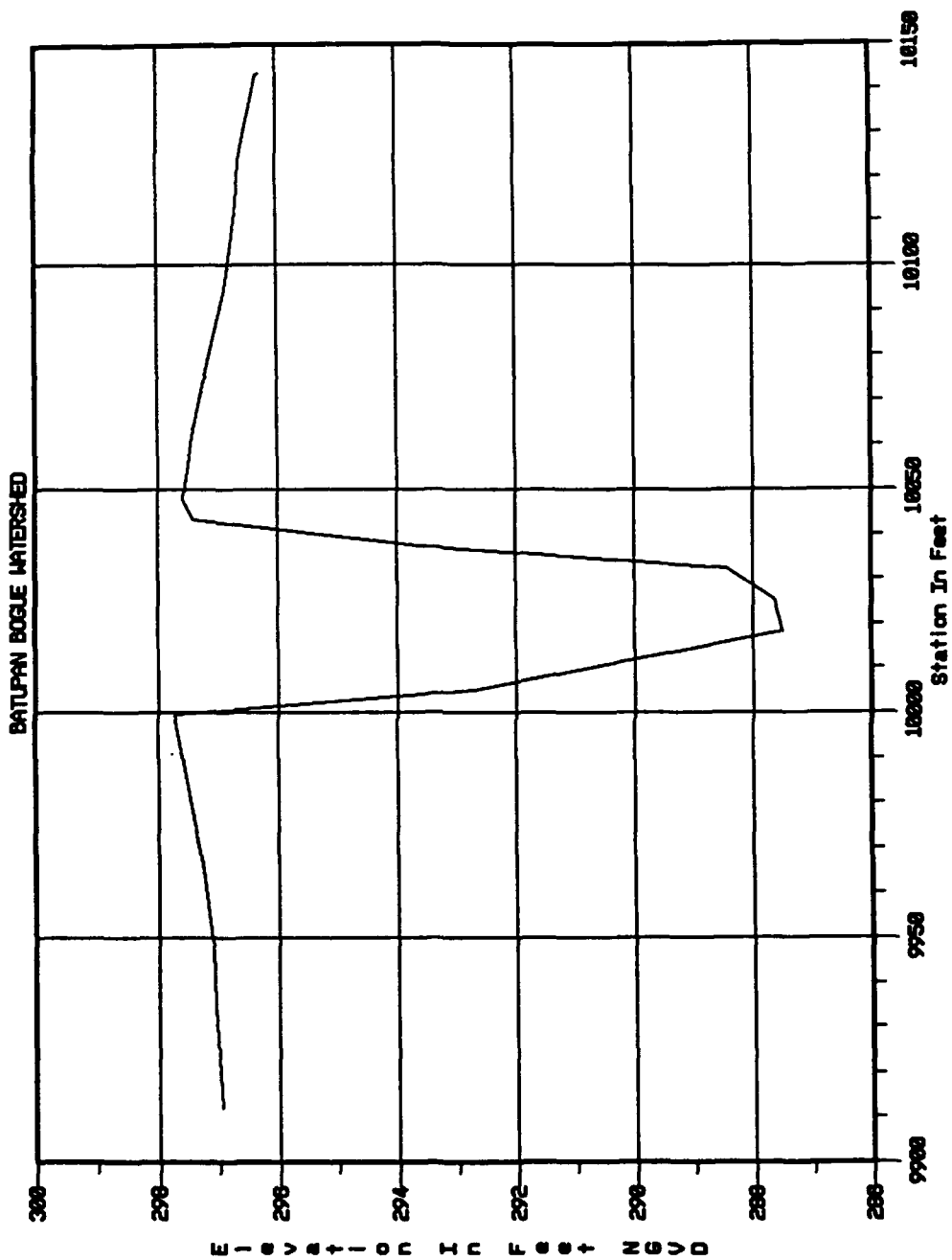
PLATE C228



BATUPAN BOGLE WATERSHED



———— LITTLE BOGLE 1965 XSEC 800.00
 - - - - - LITTLE BOGLE 1991 XSEC 821.00



— LITTLE BOGLE 1965 XSEC 831.60

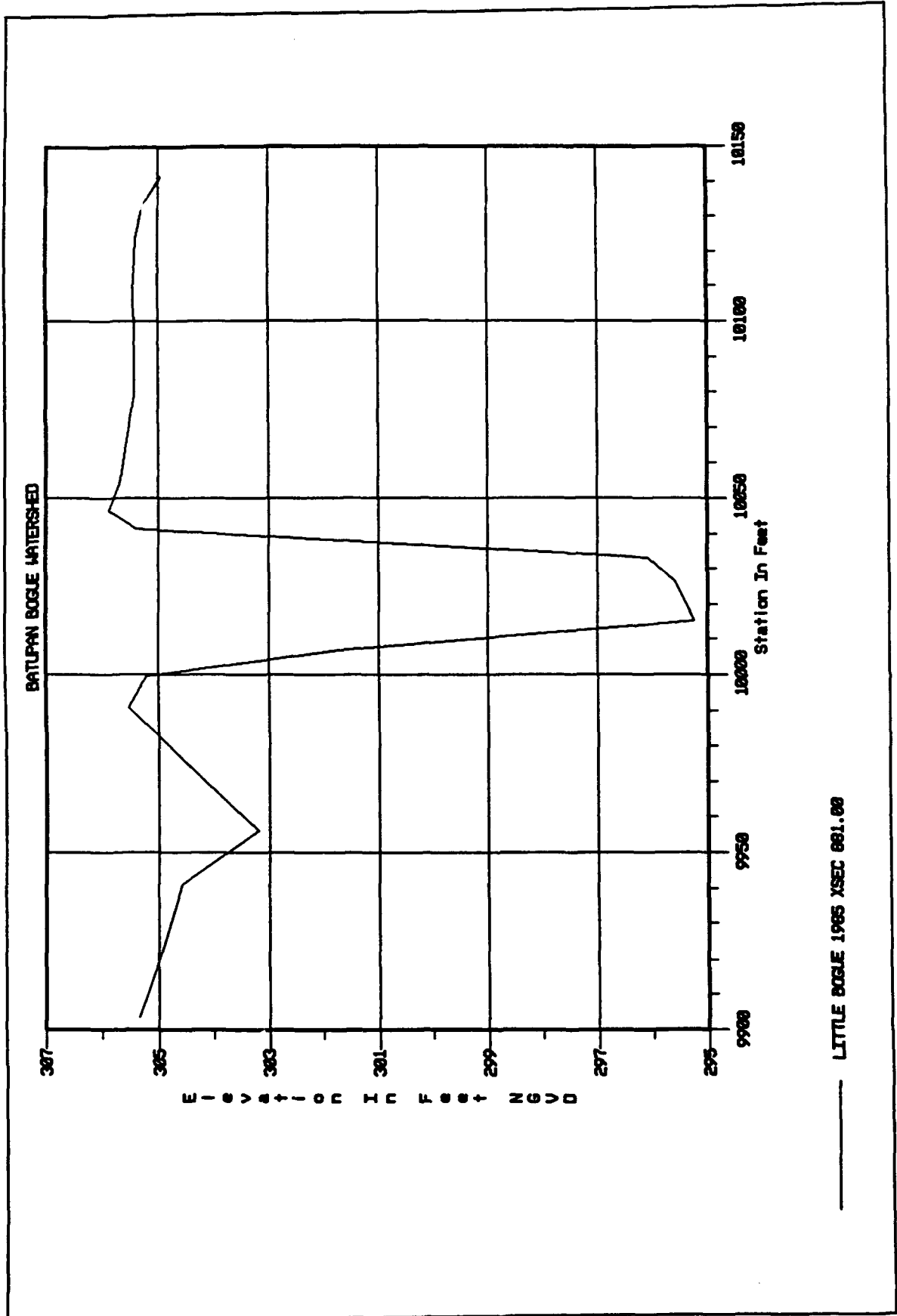
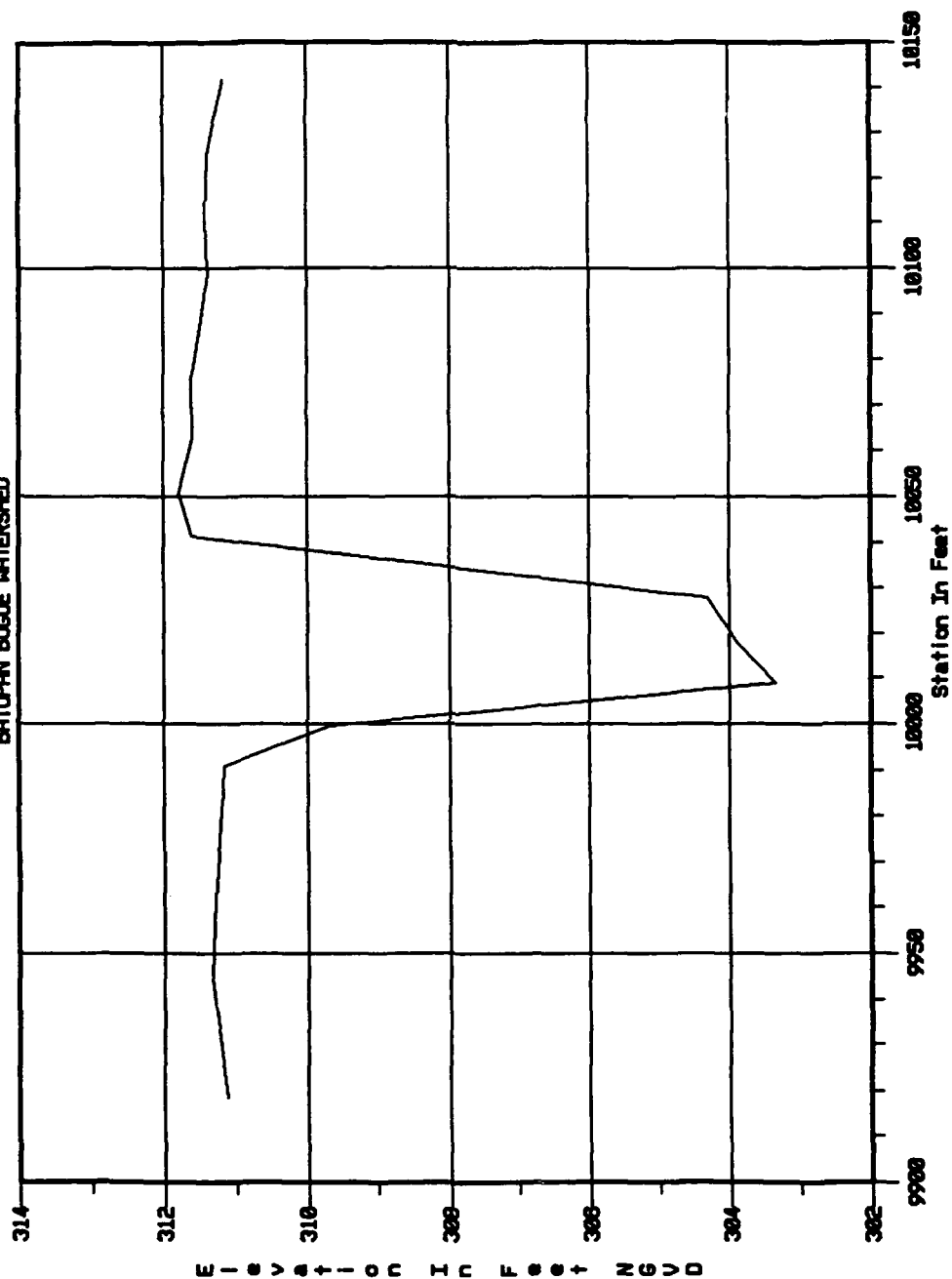


PLATE C232

BATUPAN BOGUE WATERSHED



— LITTLE BOGUE 1985 XSEC 929.00

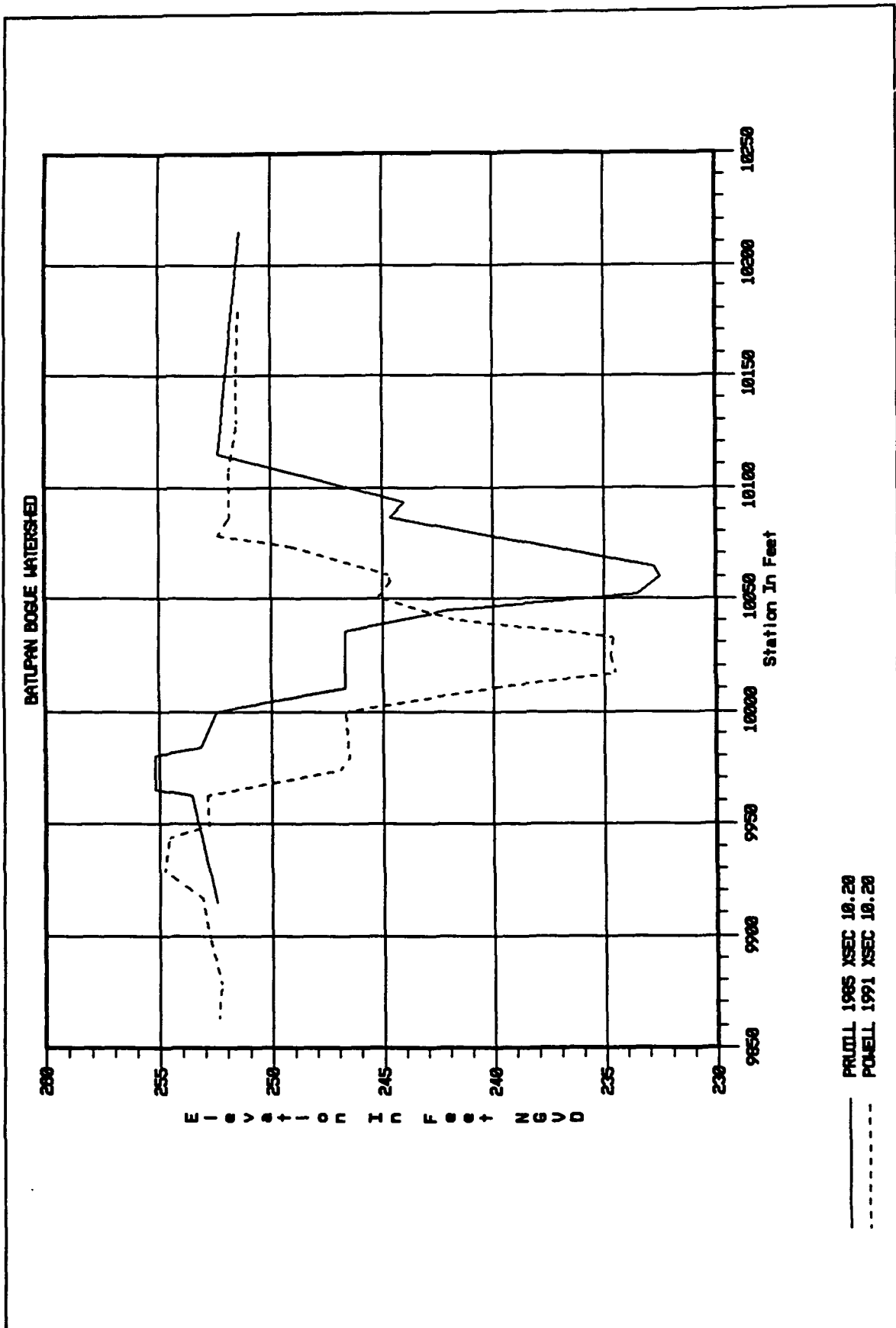
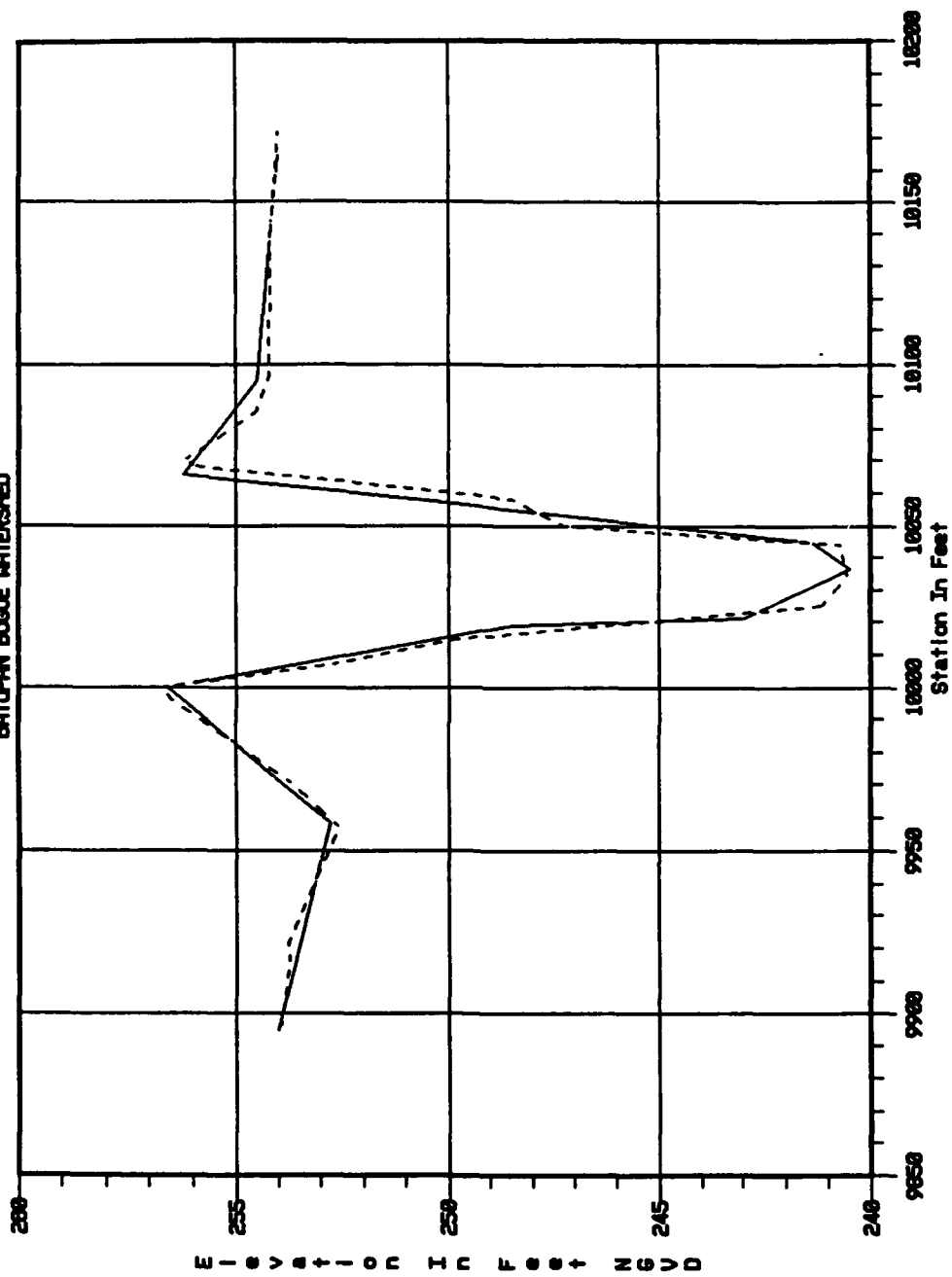


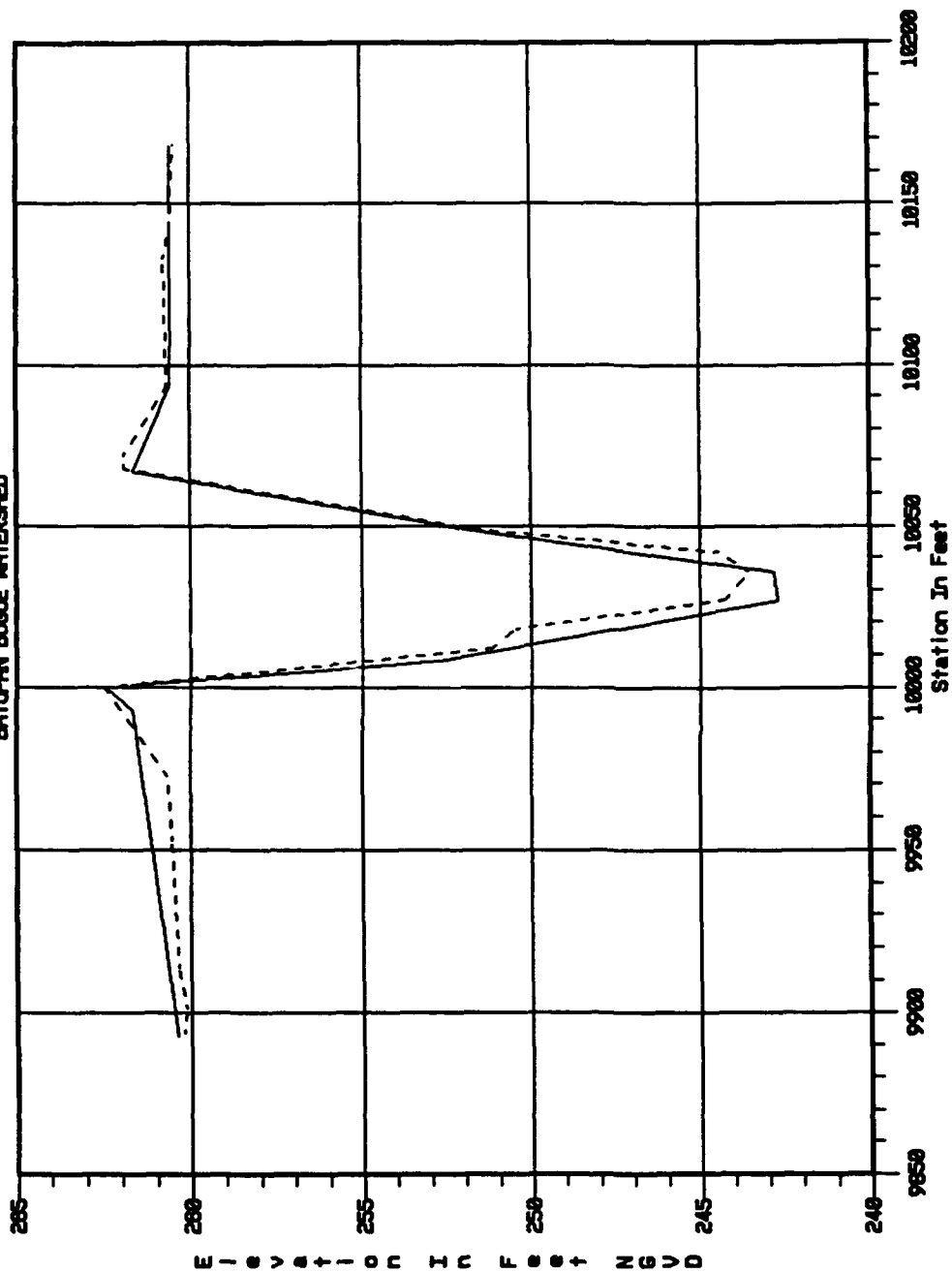
PLATE C234

BATUPAN BOGLE WATERSHED

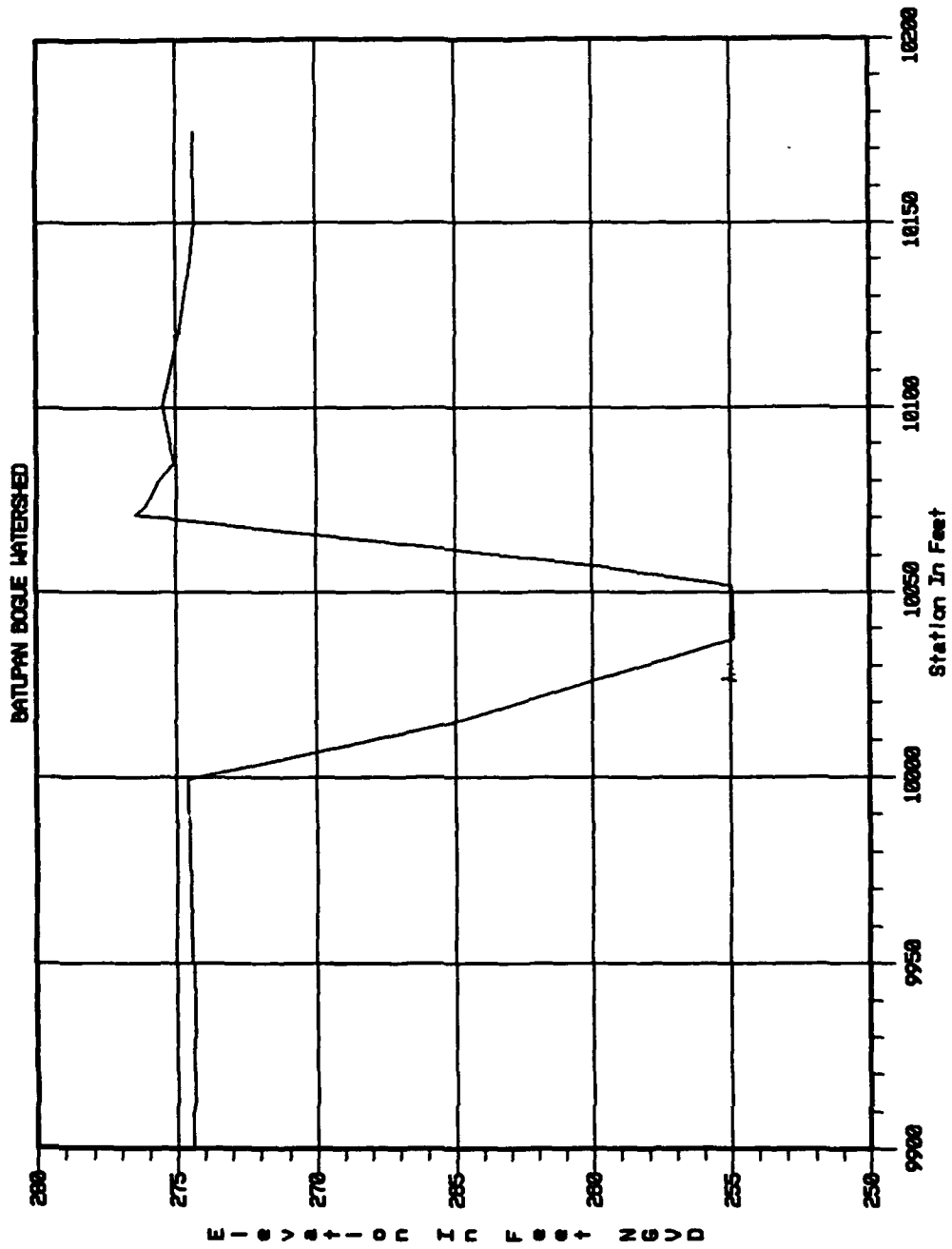


PRUTLL 1985 XSEC 37.00
POWELL 1991 XSEC 37.00

BATUPAN BOGLE WATERSHED

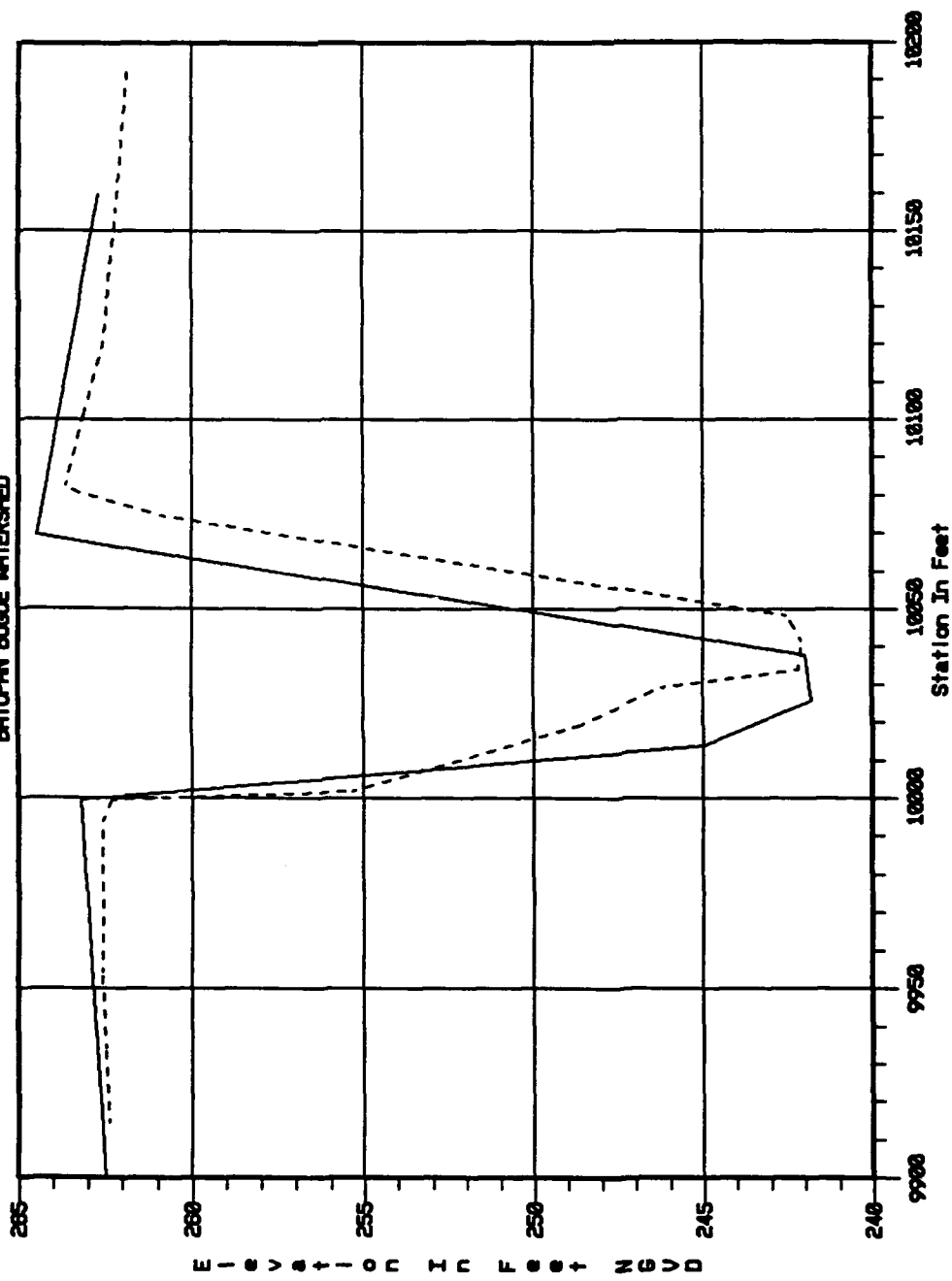


— PRUILL 1985 XSEC 84.00
 - - - POUELL 1991 XSEC 65.00

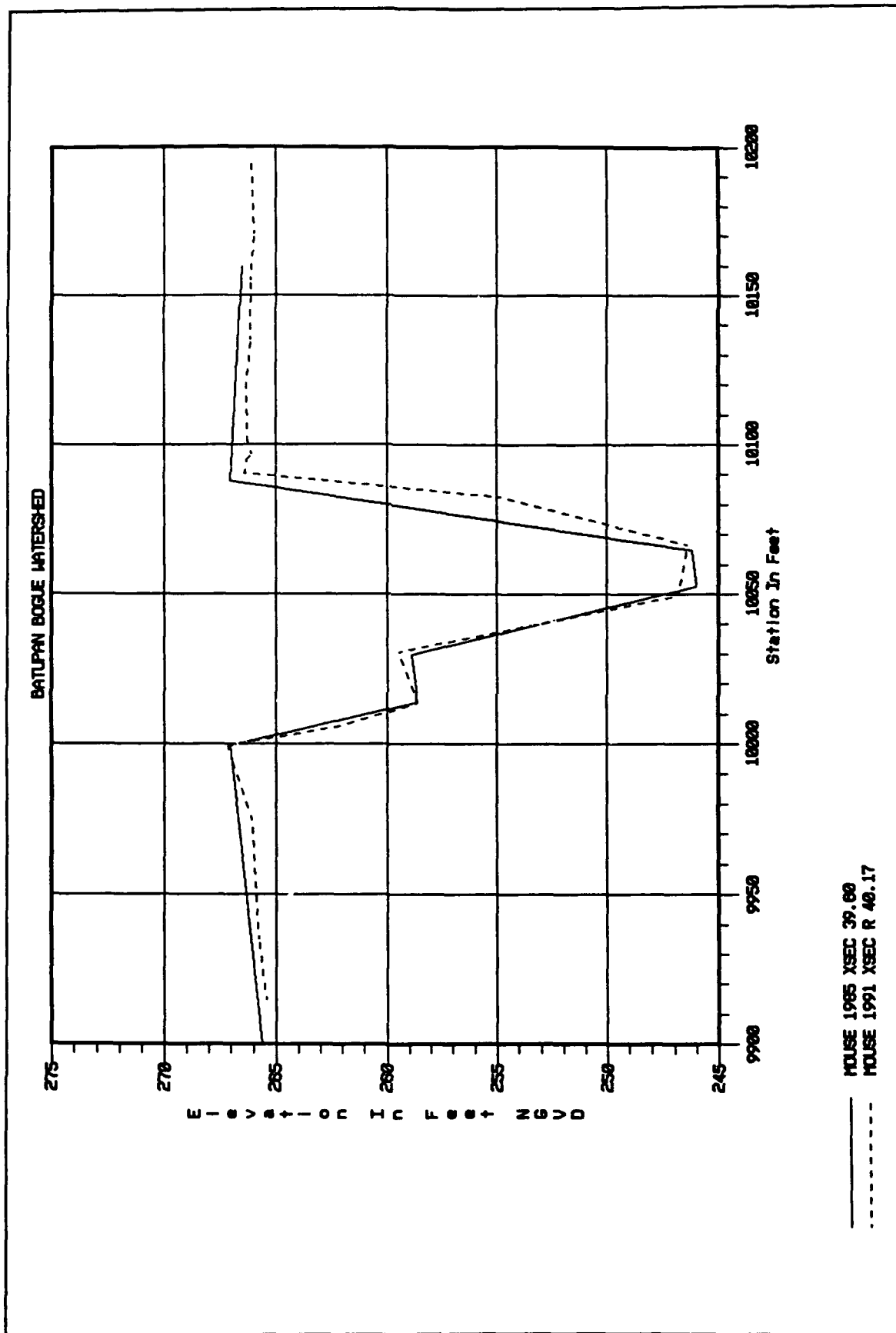


POWELL 1991 XSEC 131.20

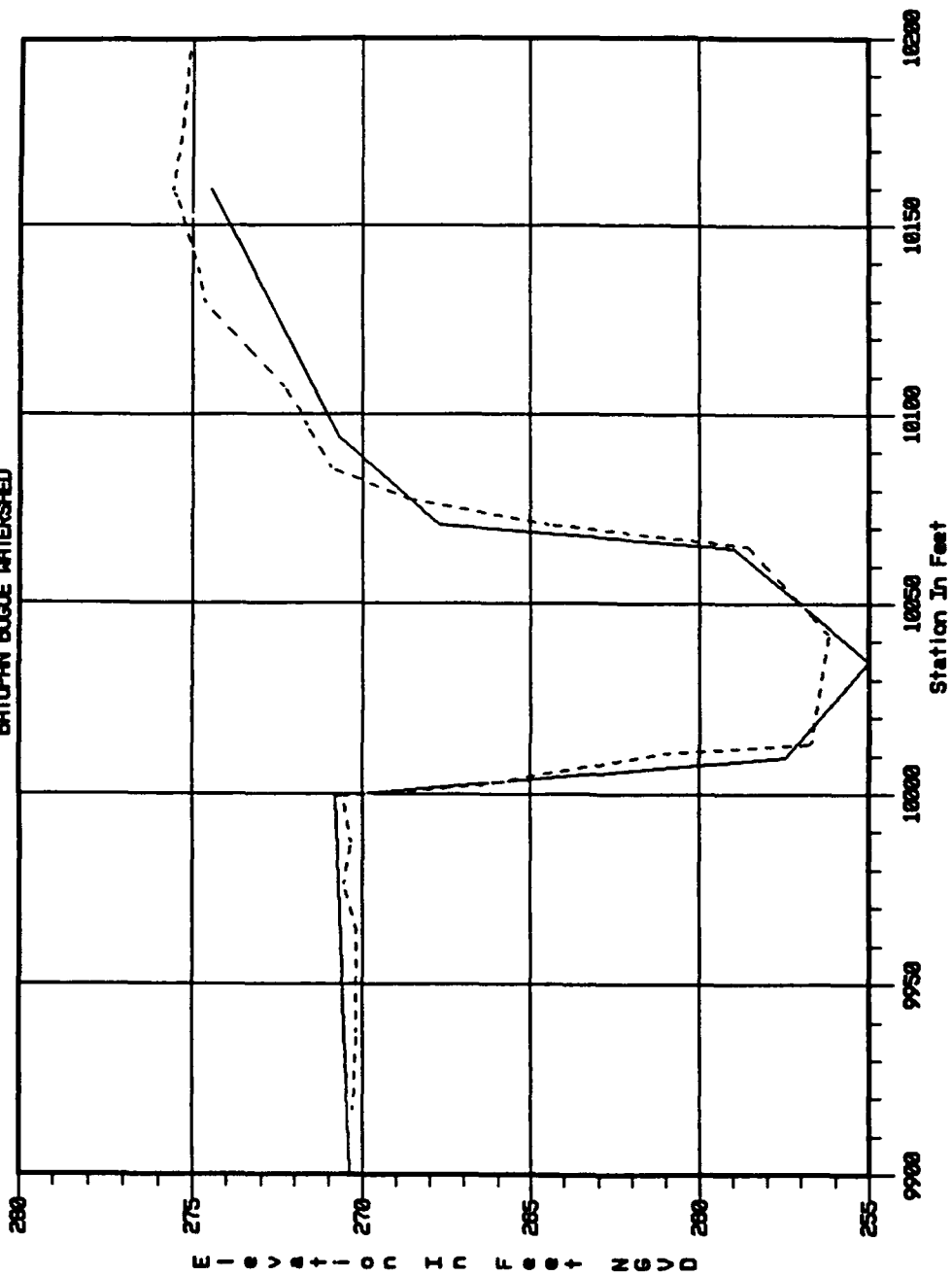
BATUPAN BOGLE WATERSHED



MOUSE 1985 XSEC 14.40
MOUSE 1991 XSEC R 14.52

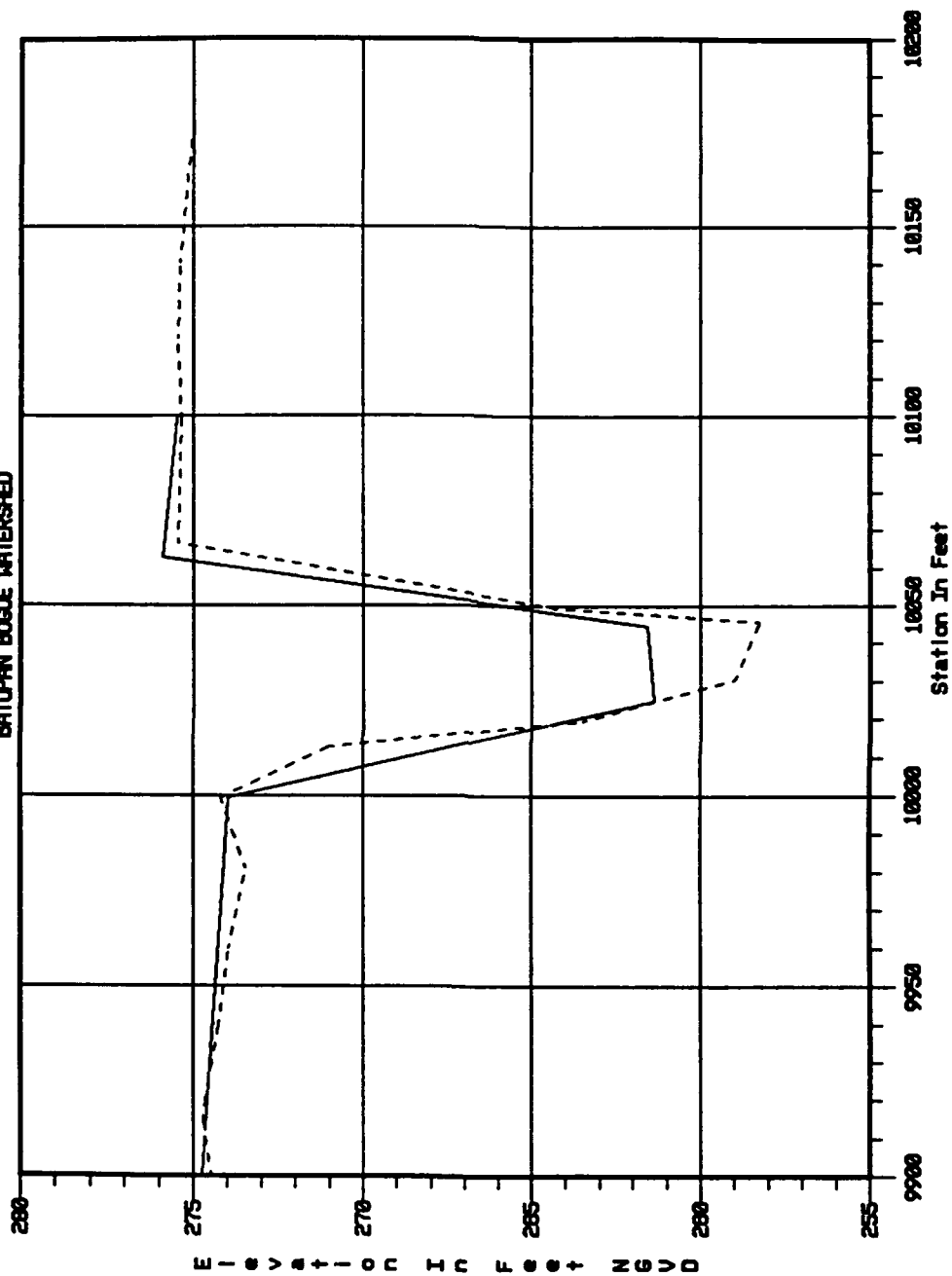


BATUPAN BOGUE WATERSHED



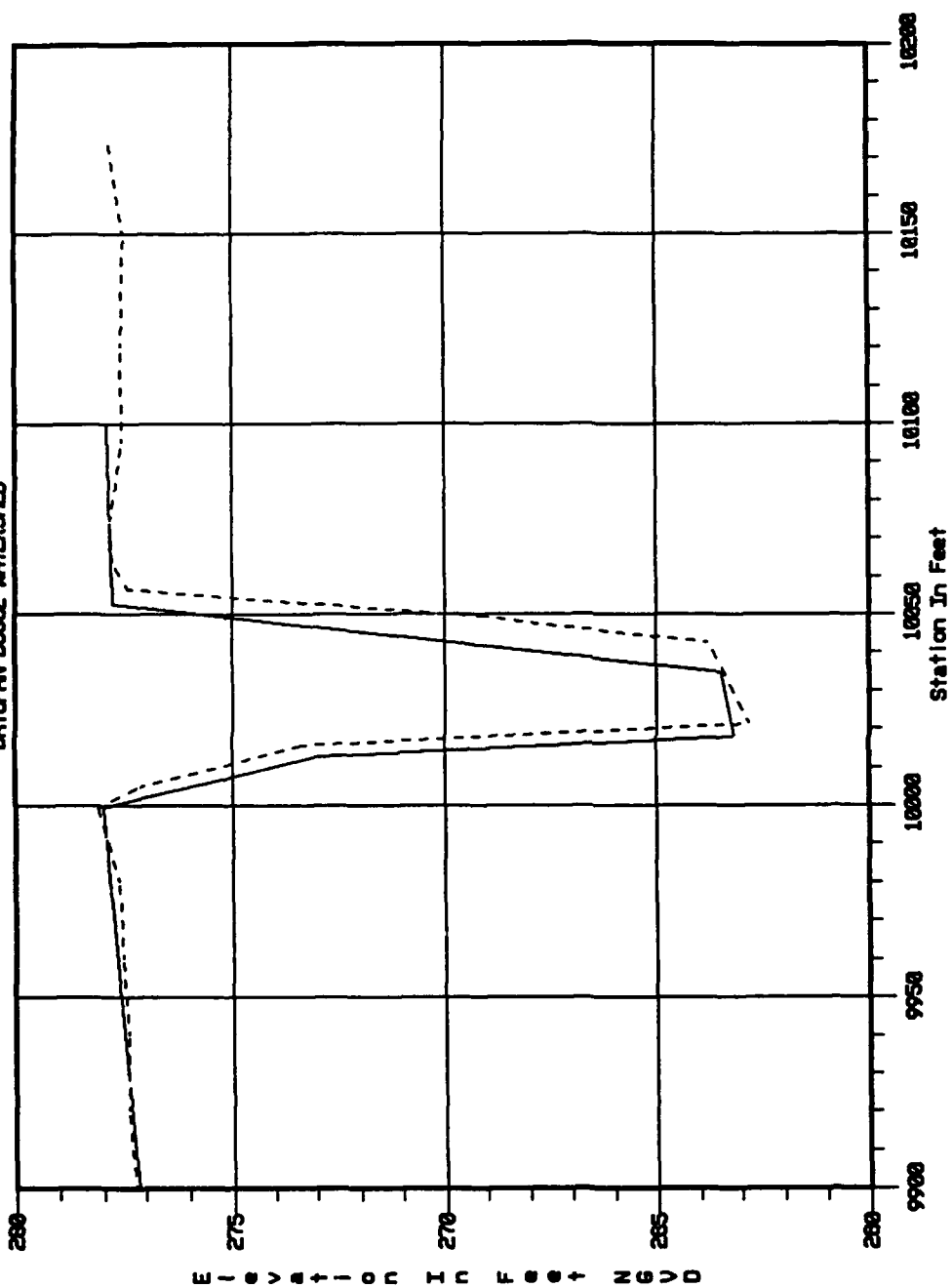
— HOUSE 1965 XSEC R 61.45
 - - - HOUSE 1991 XSEC R 63.35

BATUPAN BOSJE WATERSHED

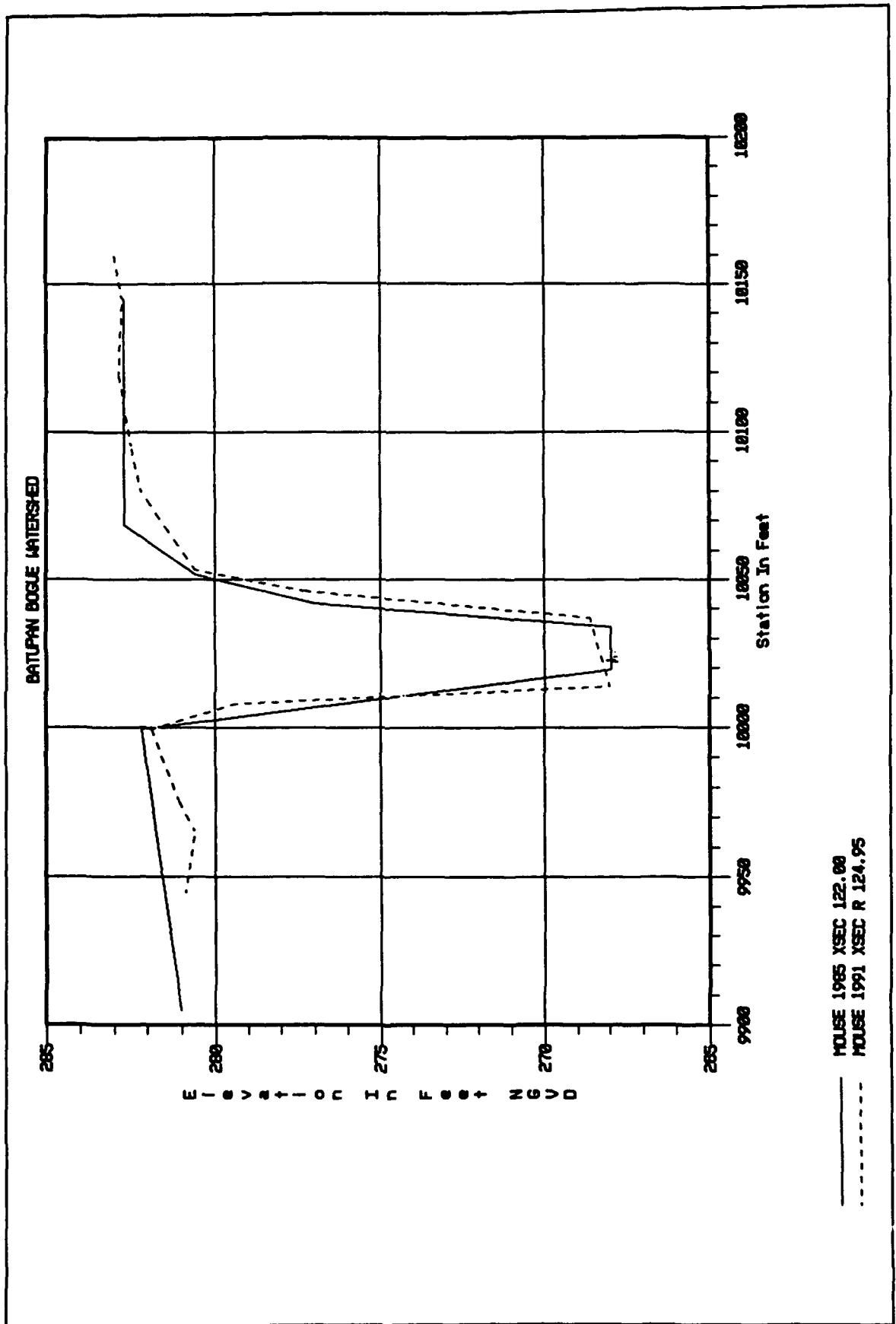


HOUSE 1985 XSEC 84.58
HOUSE 1991 XSEC R 88.59

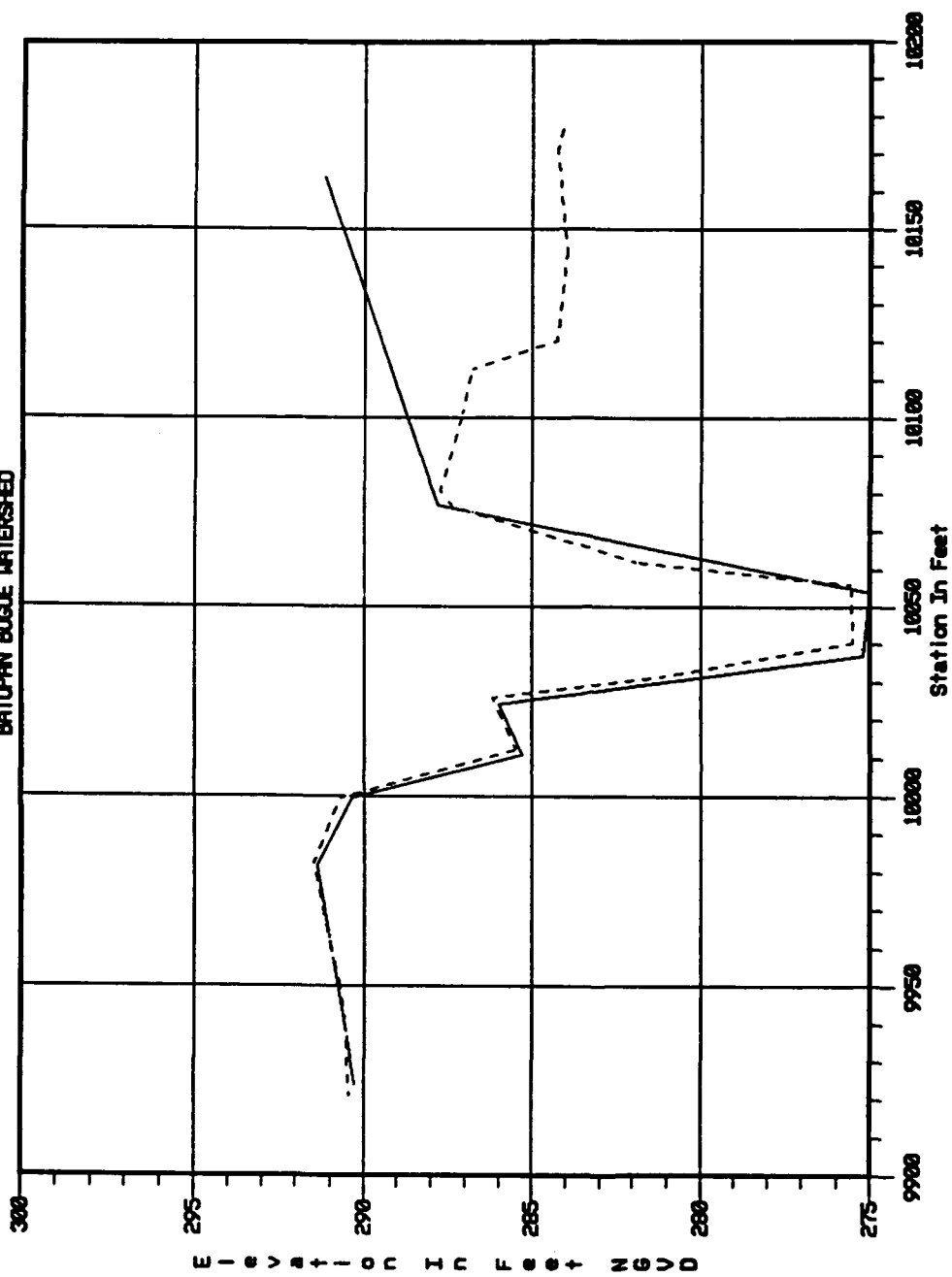
BATUPAN BOGLE WATERSHED



_____ MOUSE 1985 XSEC 102.05
 - - - - - MOUSE 1991 XSEC R 104.50

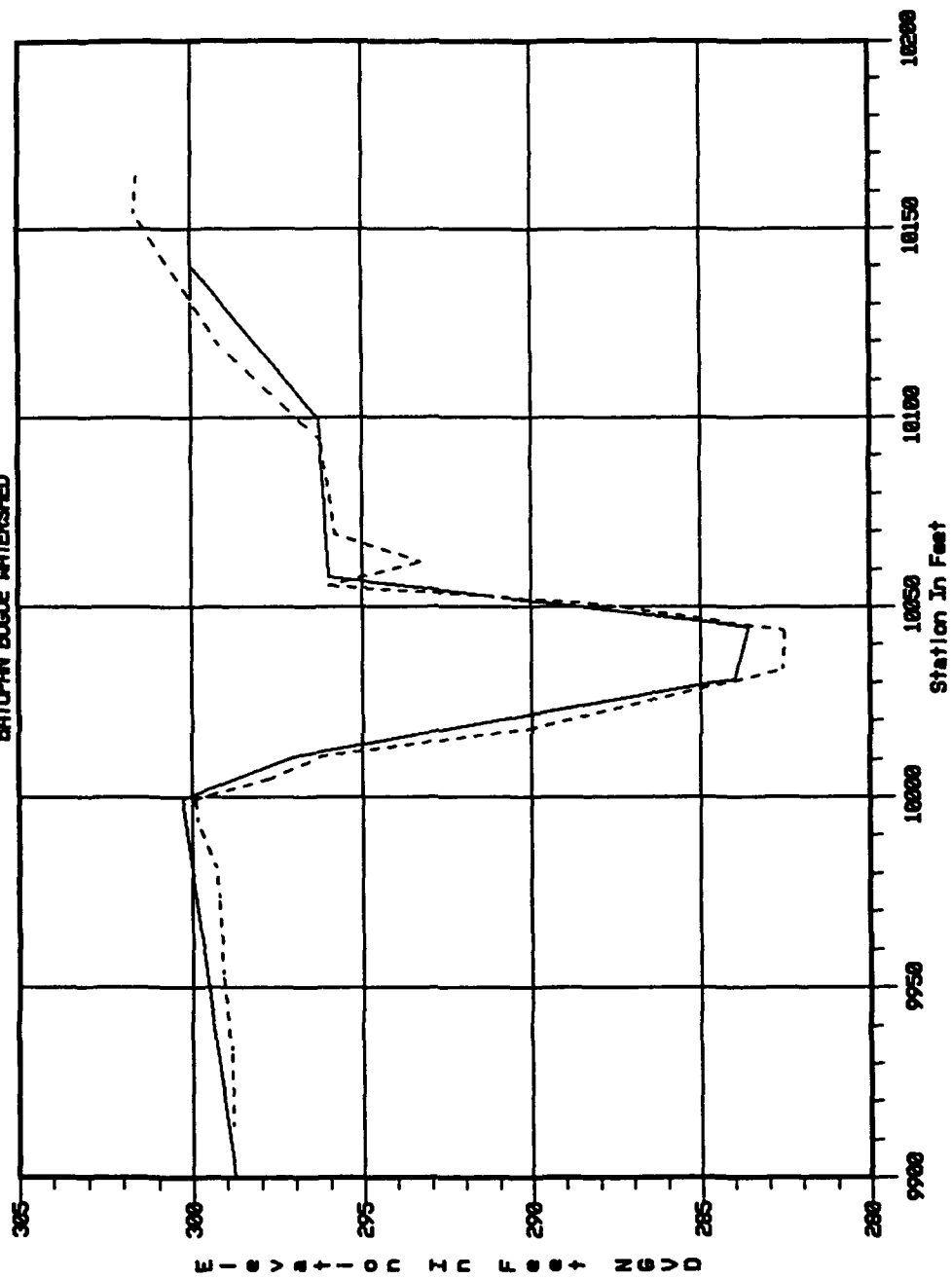


BATUPAN BOGUE WATERSHED



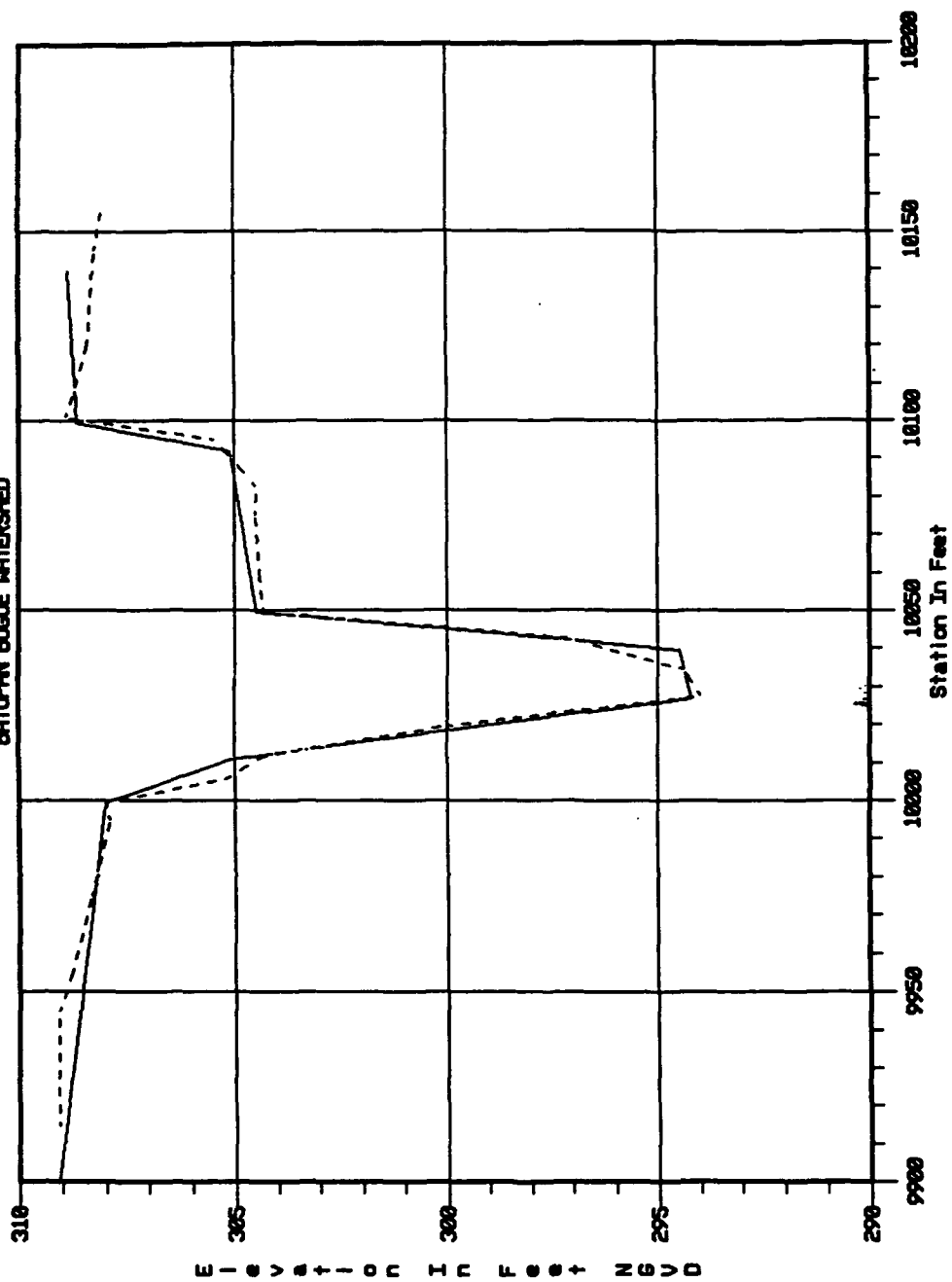
MOUSE 1985 XSEC 180.10
MOUSE 1991 XSEC R 163.00

BATUPAN BOULE INTERSECT

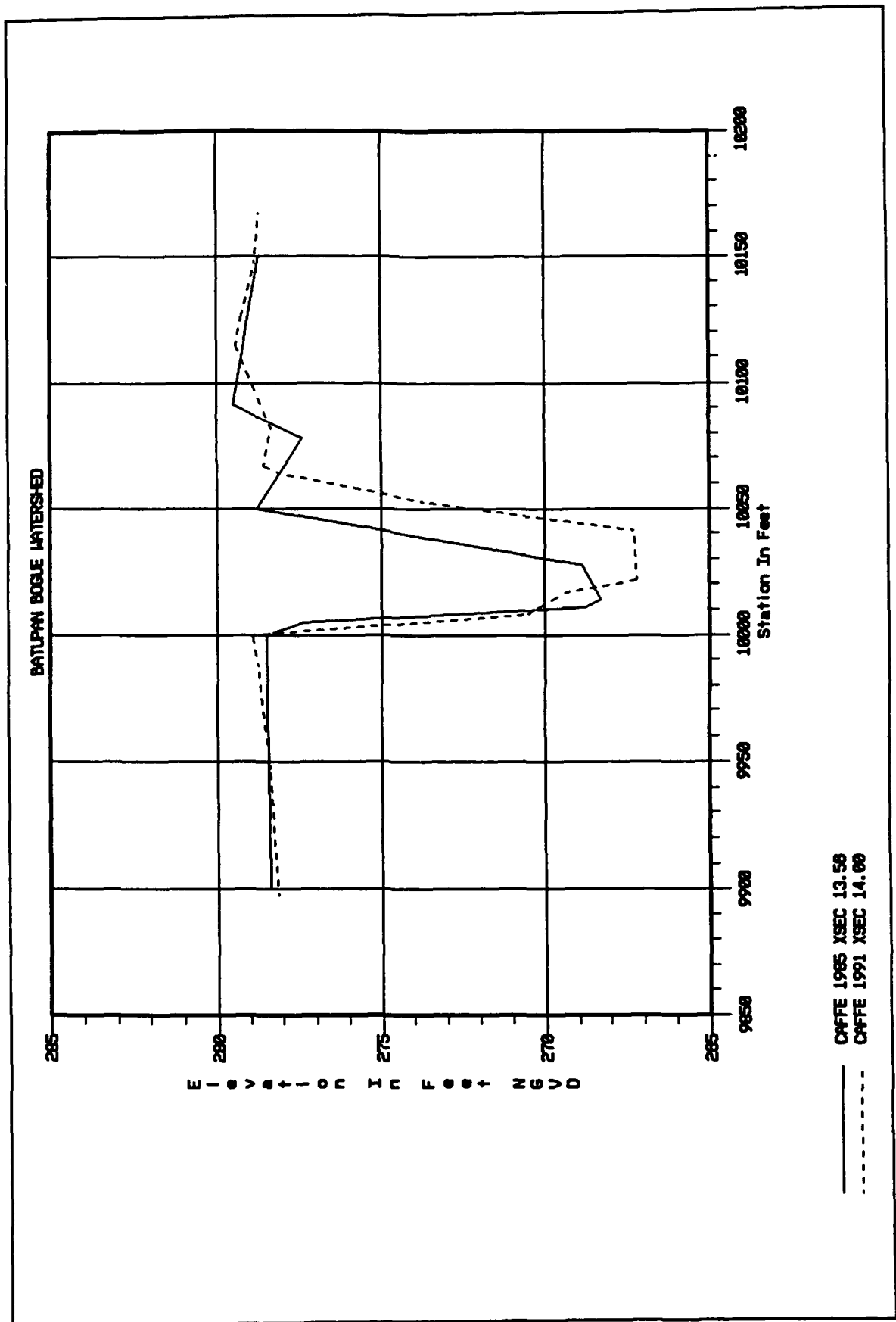


MOUSE 1985 XSEC 193.65
 MOUSE 1991 XSEC R 196.60

BATUPAN BOGLE WATERSHED



MOUSE 1985 XSEC 228.50
MOUSE 1991 XSEC R 229.79



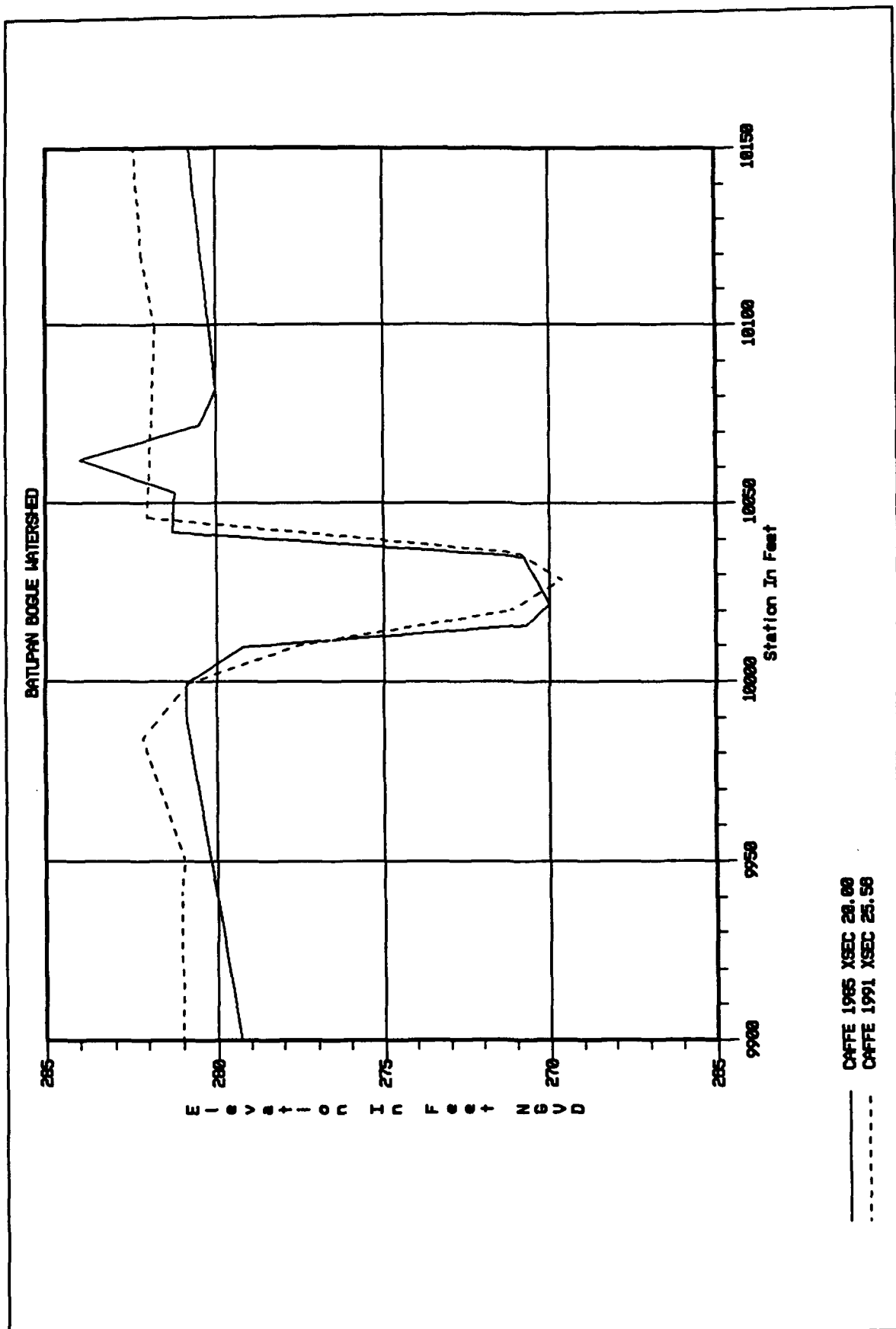
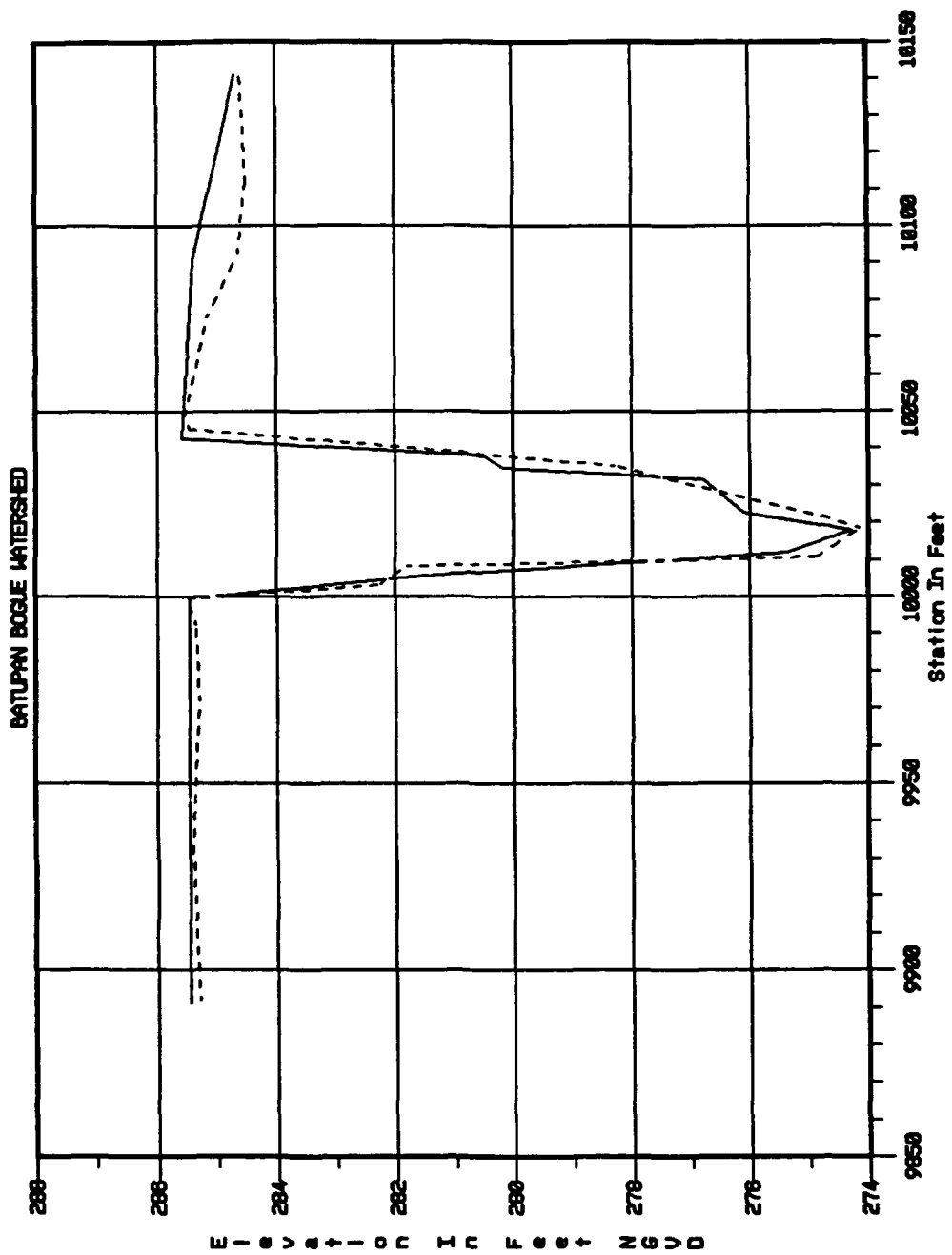
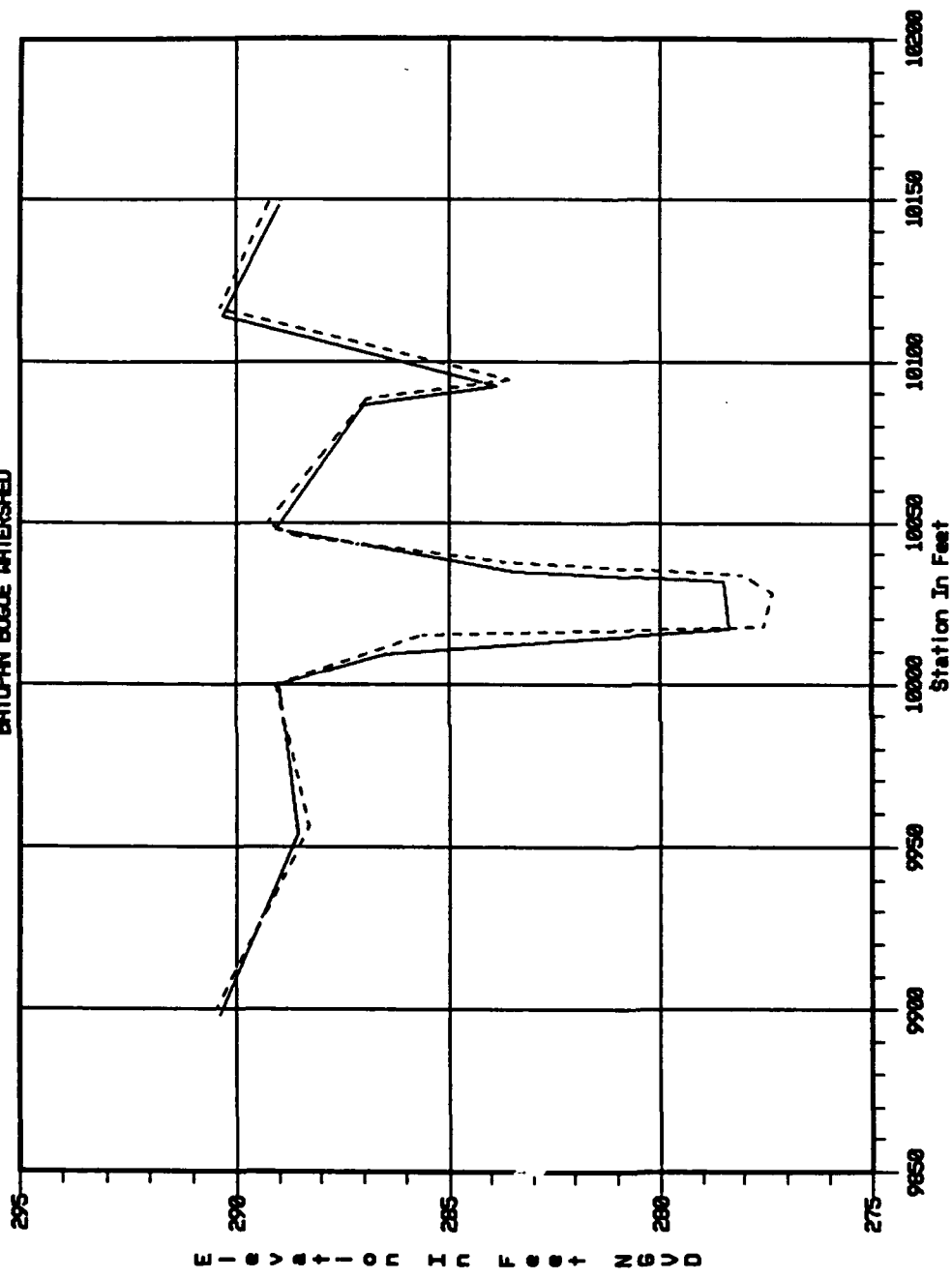


PLATE C248

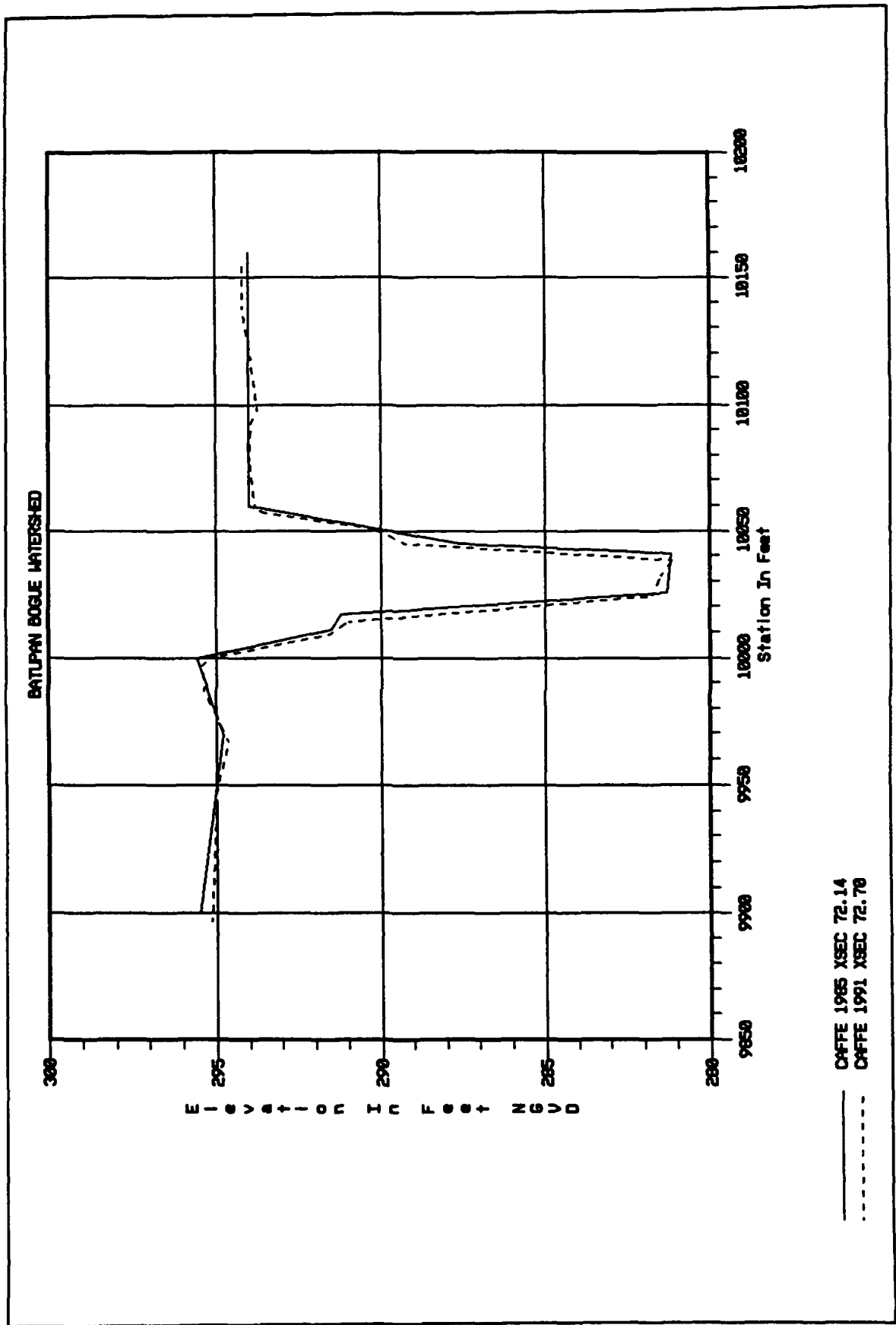


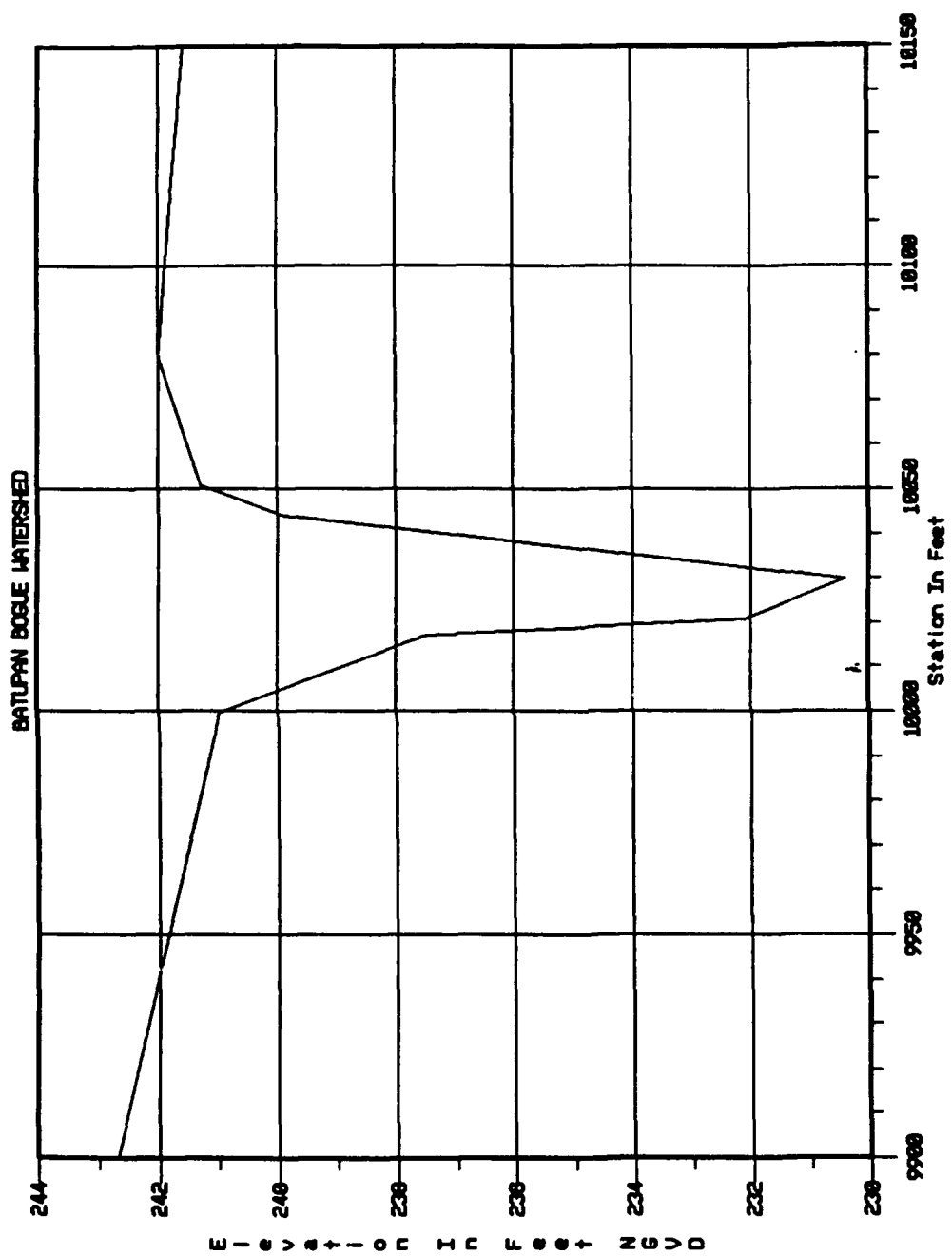
CAFFE 1985 XSEC 38.51
CAFFE 1991 XSEC 39.10

BATUPAN BOGLE WATERSHED



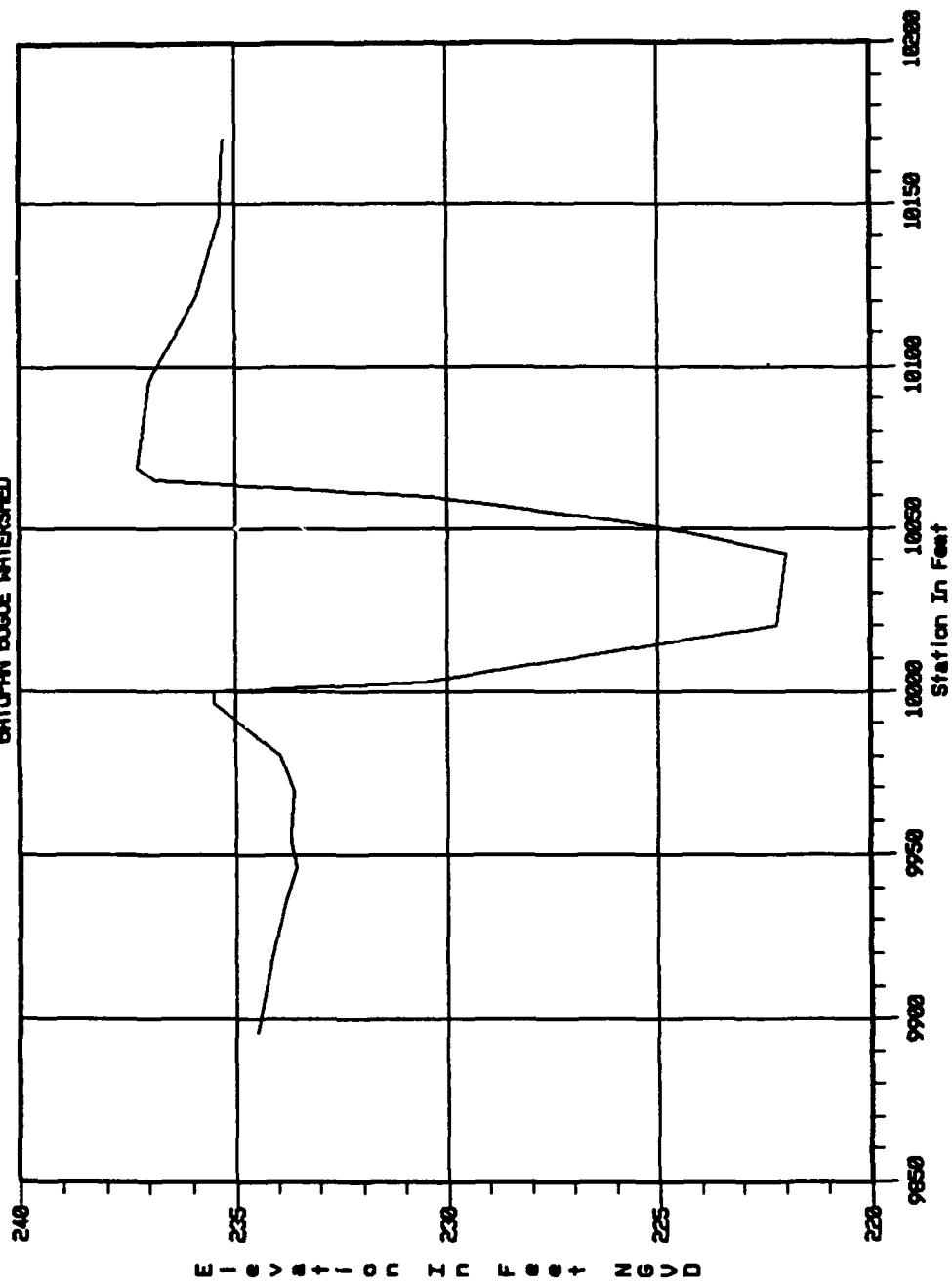
——— CAFFE 1965 XSEC 53.00
 - - - CAFFE 1991 XSEC 54.25



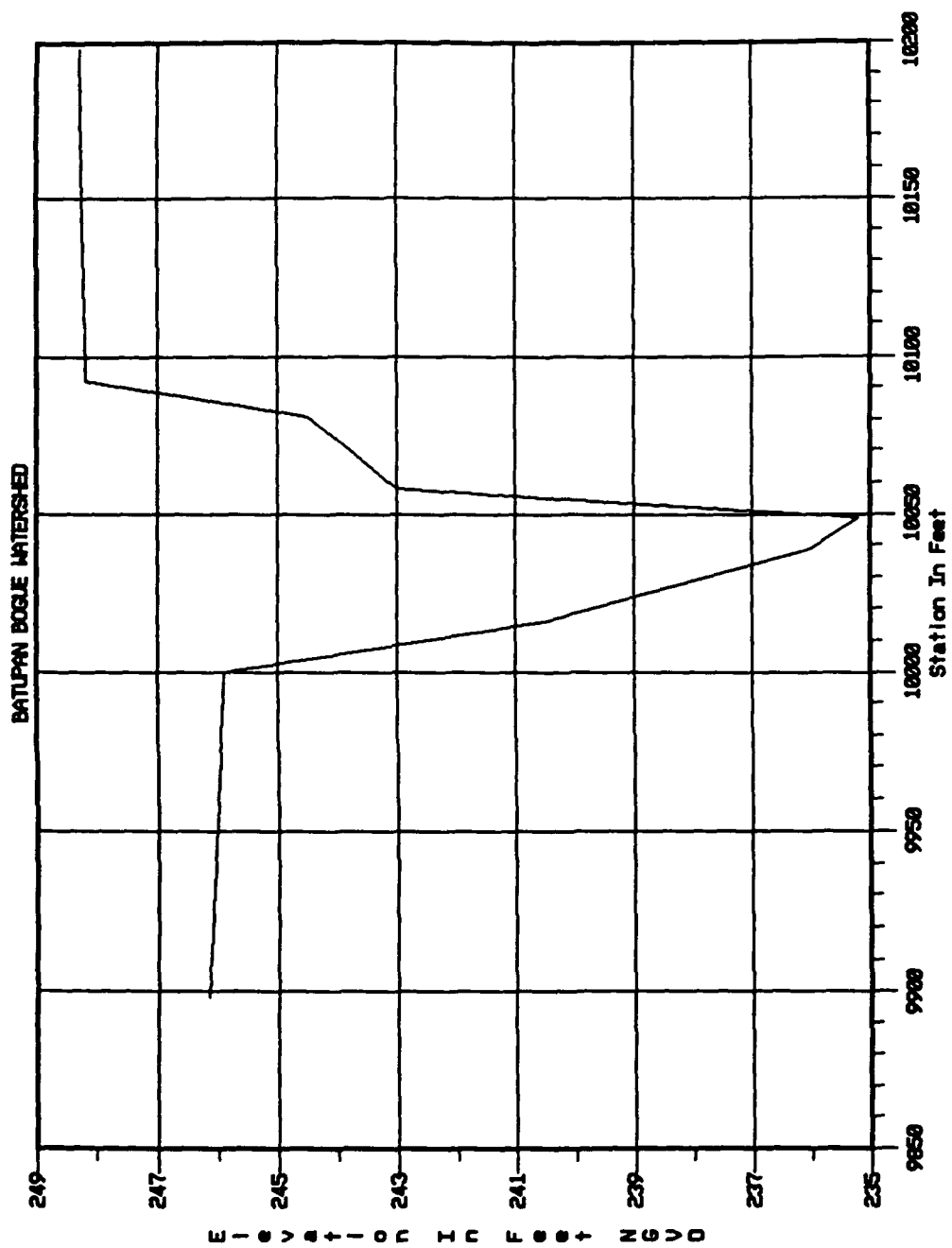


CAMPBELL 1965 XSEC 0.77

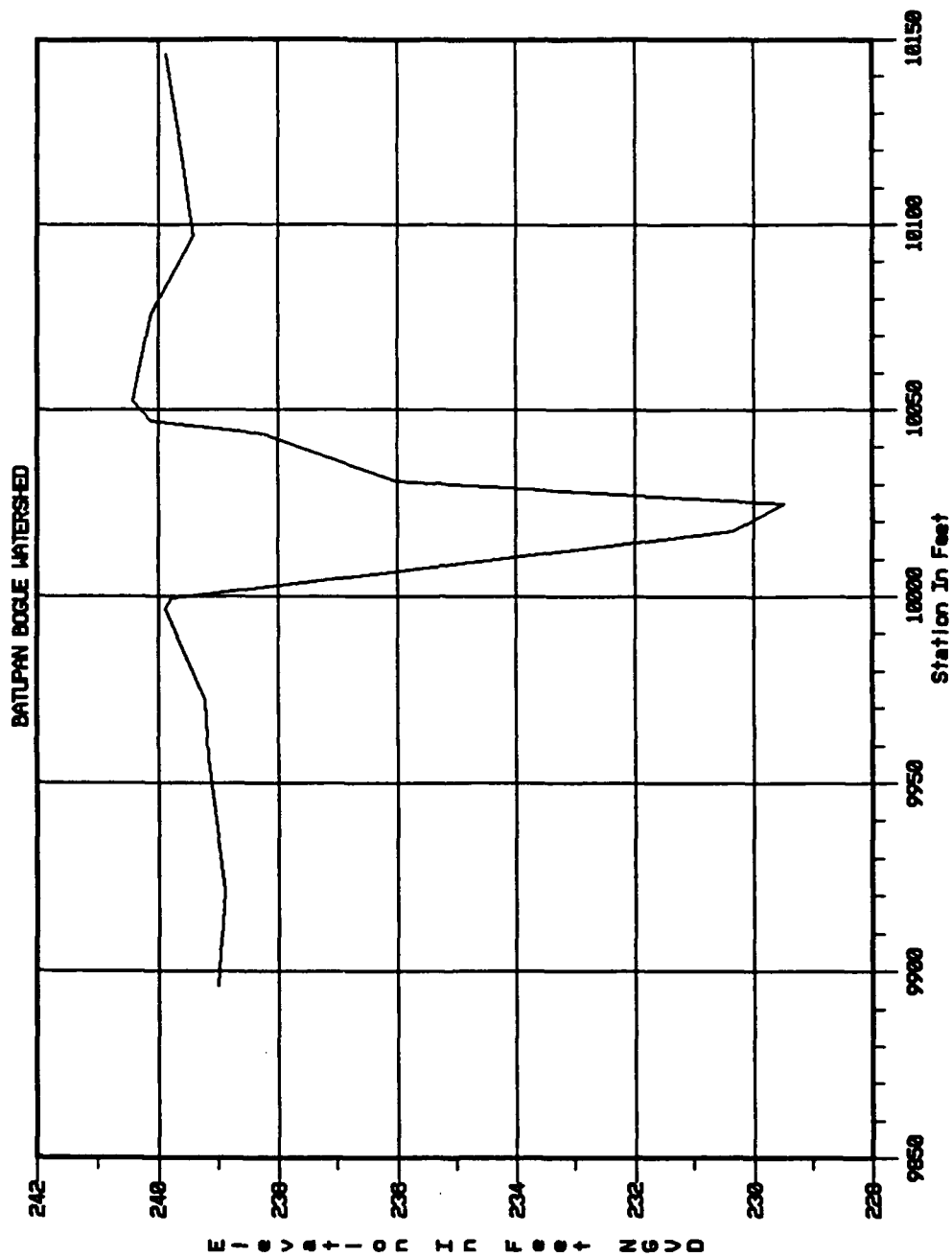
BATUPAN BOULE WATERSHED



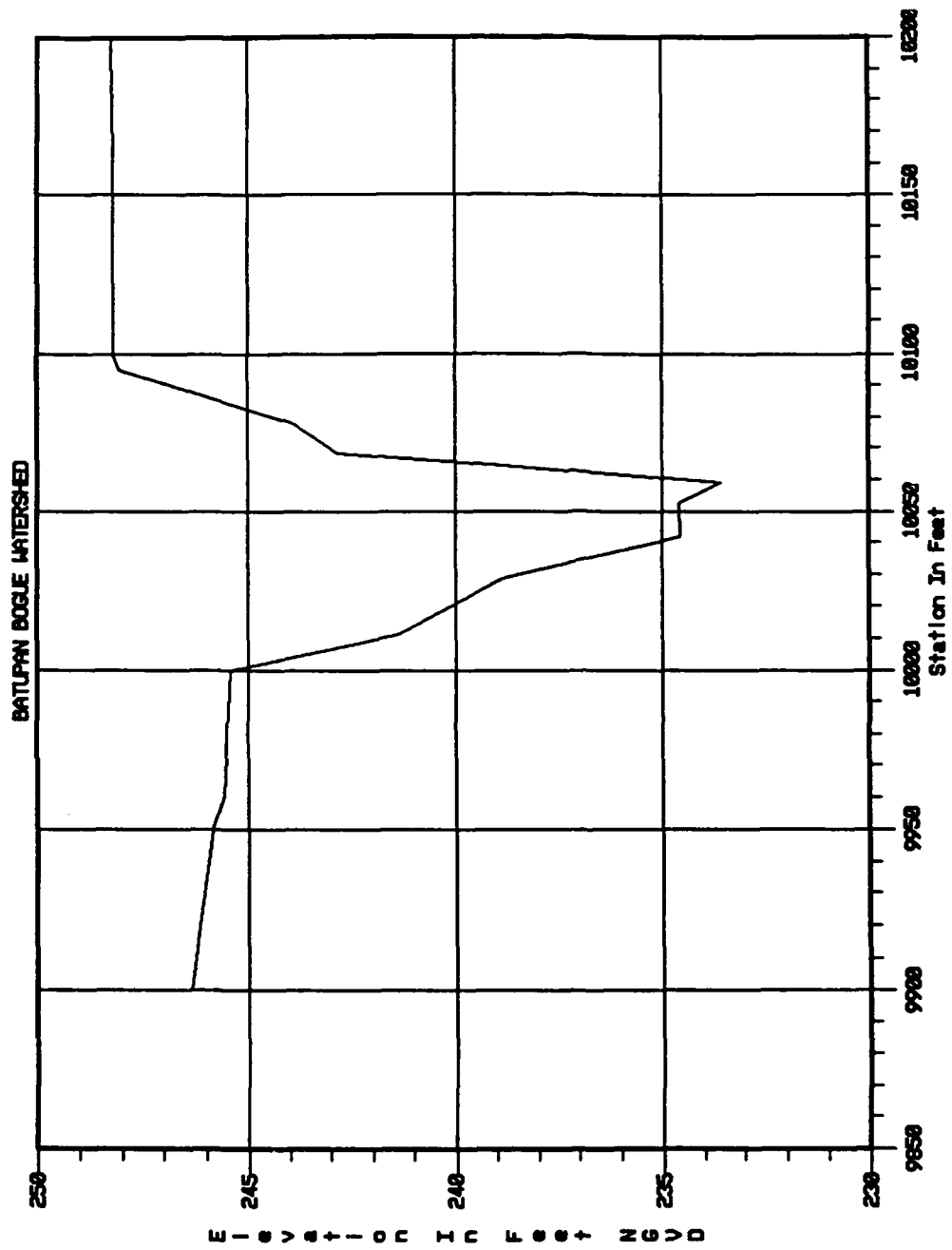
CHAPPELL 1991 XSEC 19.02



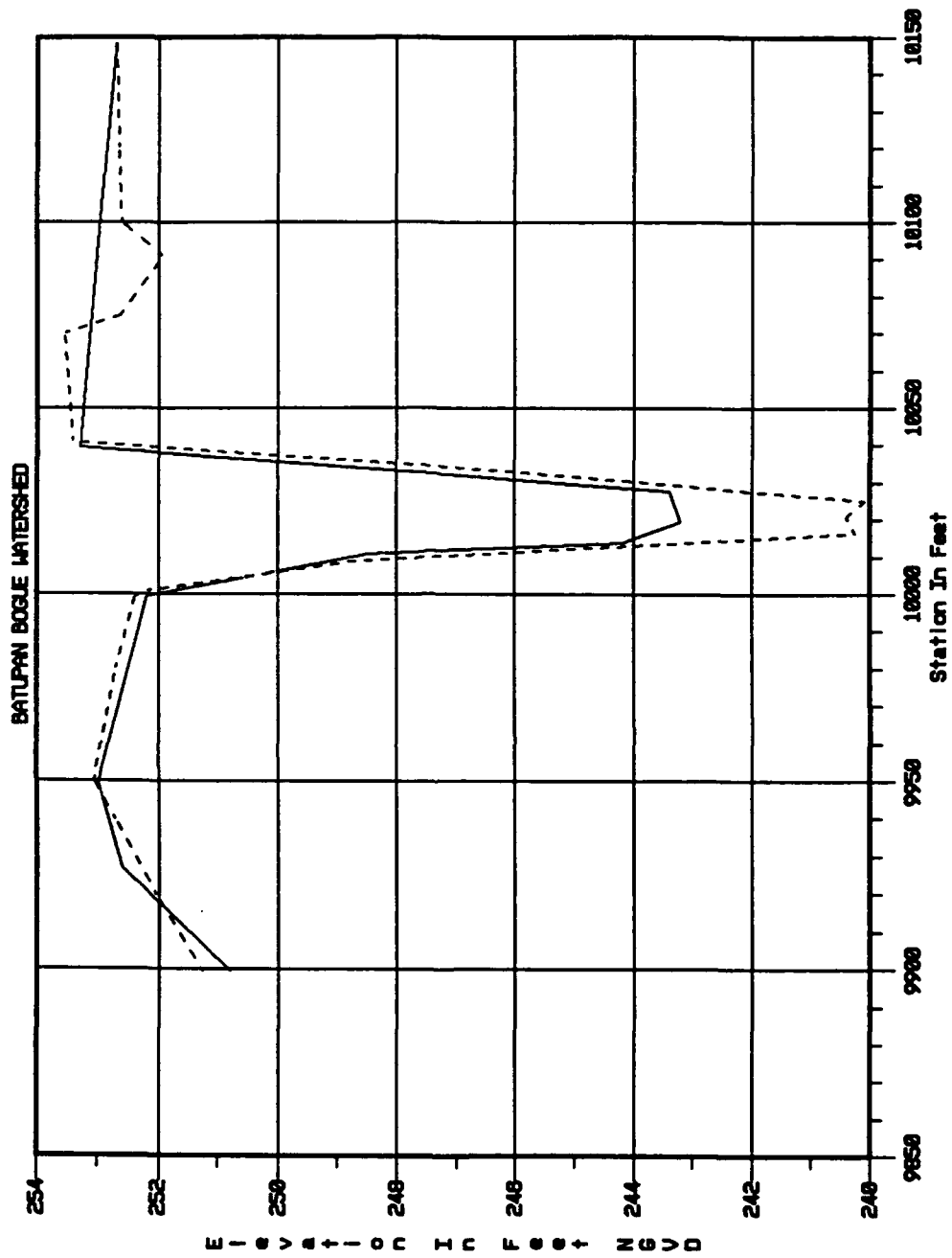
CAMPBELL 1965 XSEC 39.25



CHAPPELL 1991 XSEC 48.00

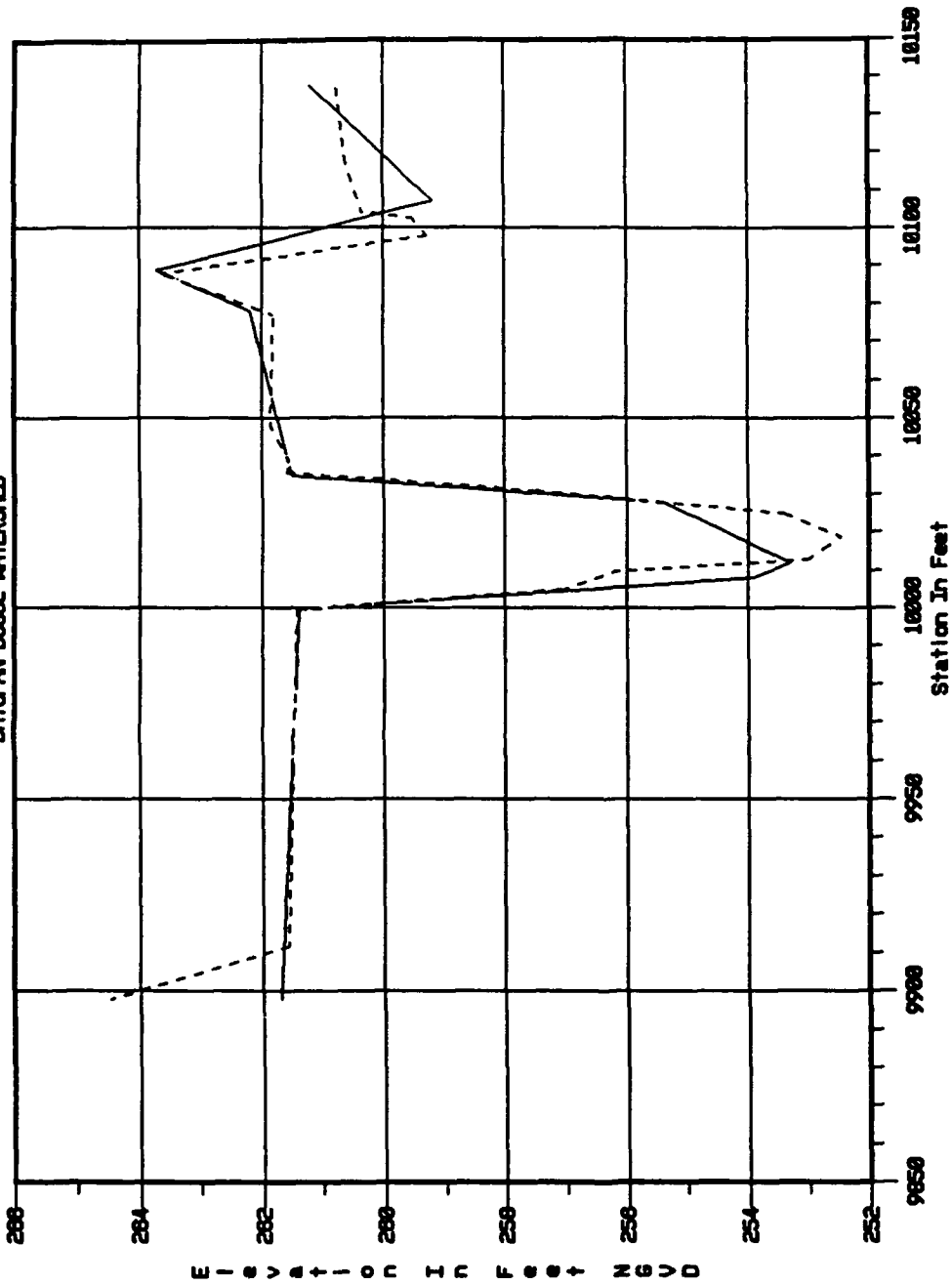


CAMPBELL 1991 XSEC 70.05

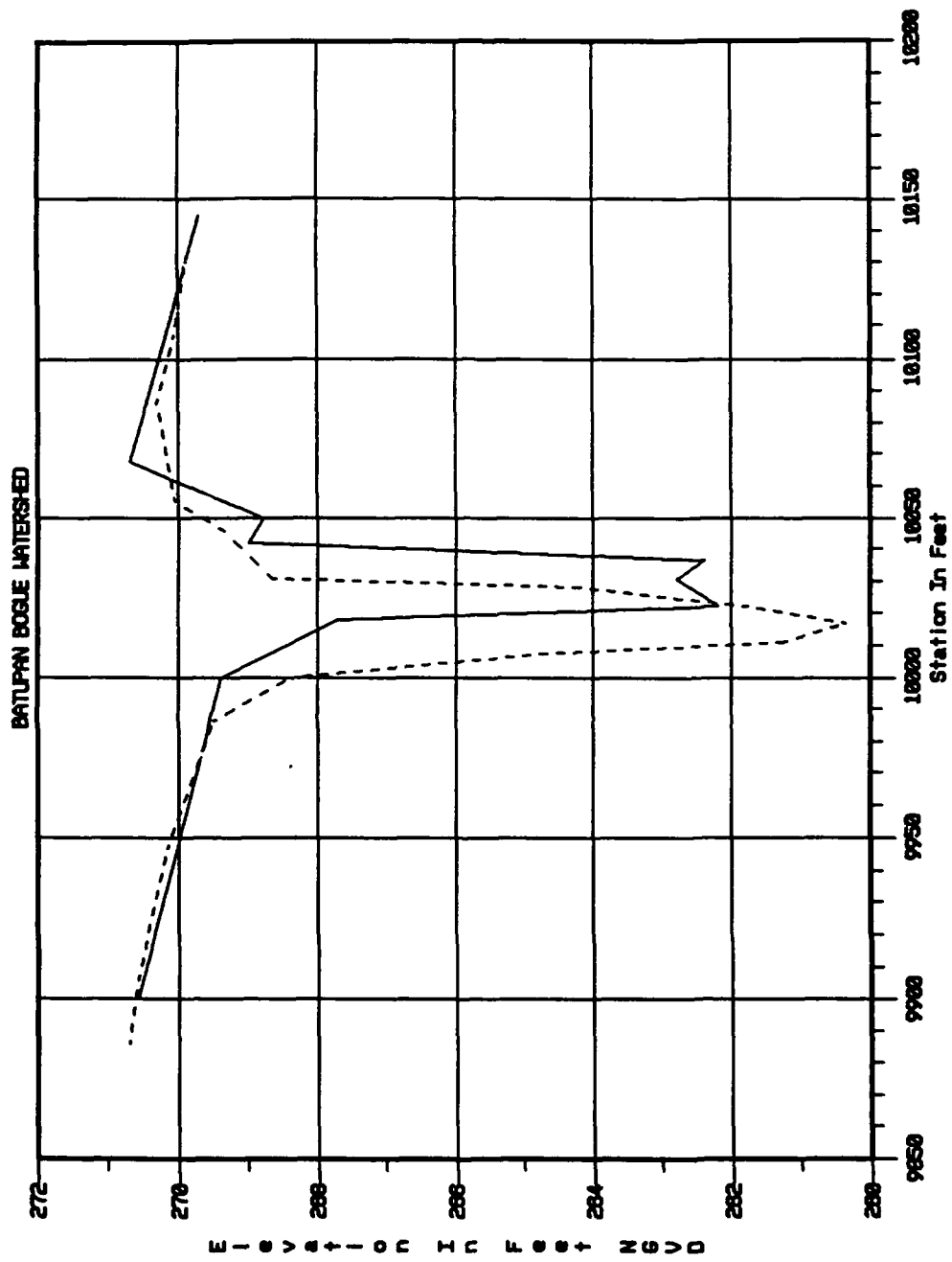


——— CAMPBELL 1965 XSEC 62.10
 - - - - - CAMPBELL 1991 XSEC 93.10

BATUPAN BOGLE INTERSECT

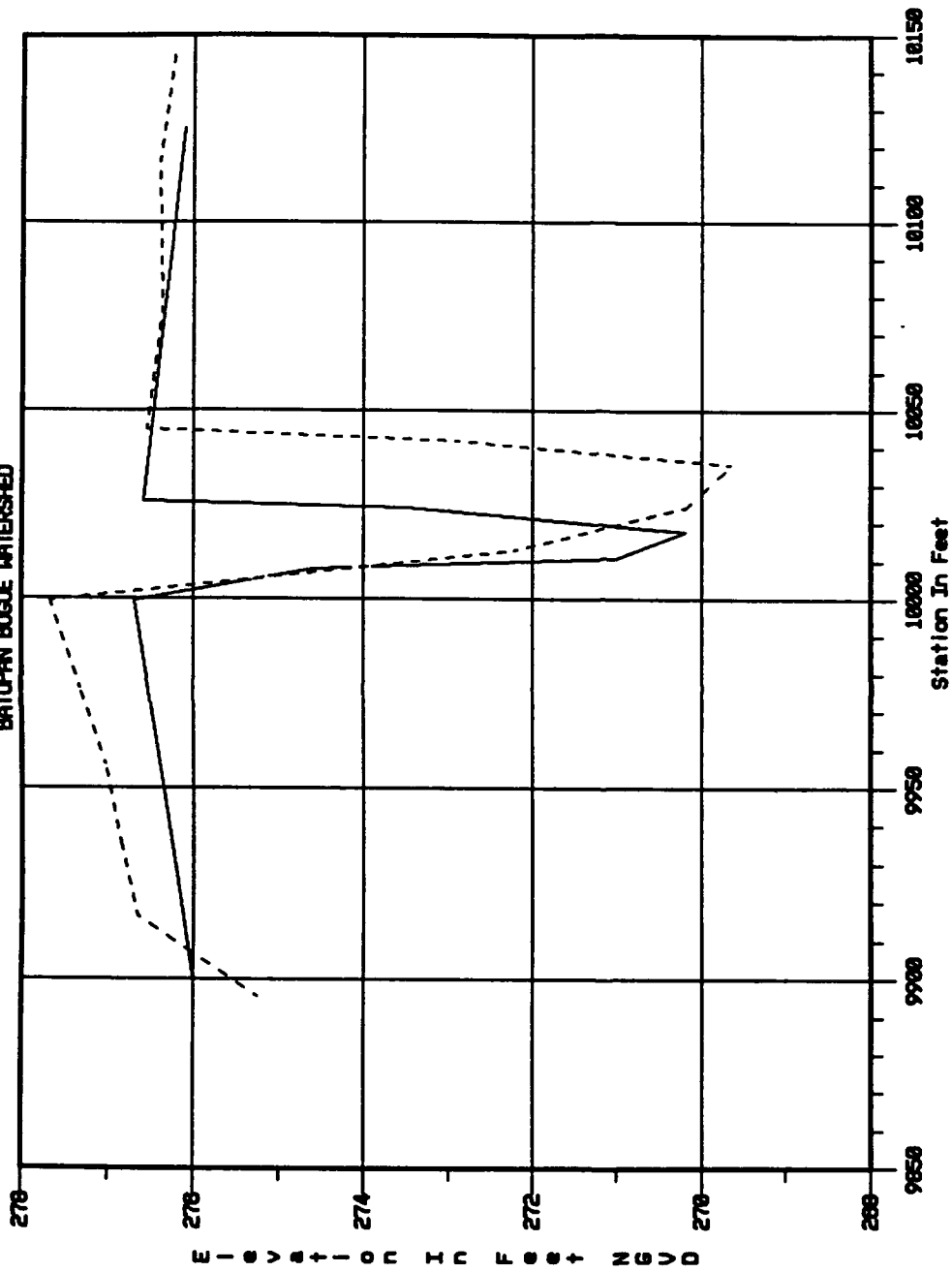


— CAMPBELL 1985 XSEC 91.05
 - - - CAMPBELL 1991 XSEC 121.40

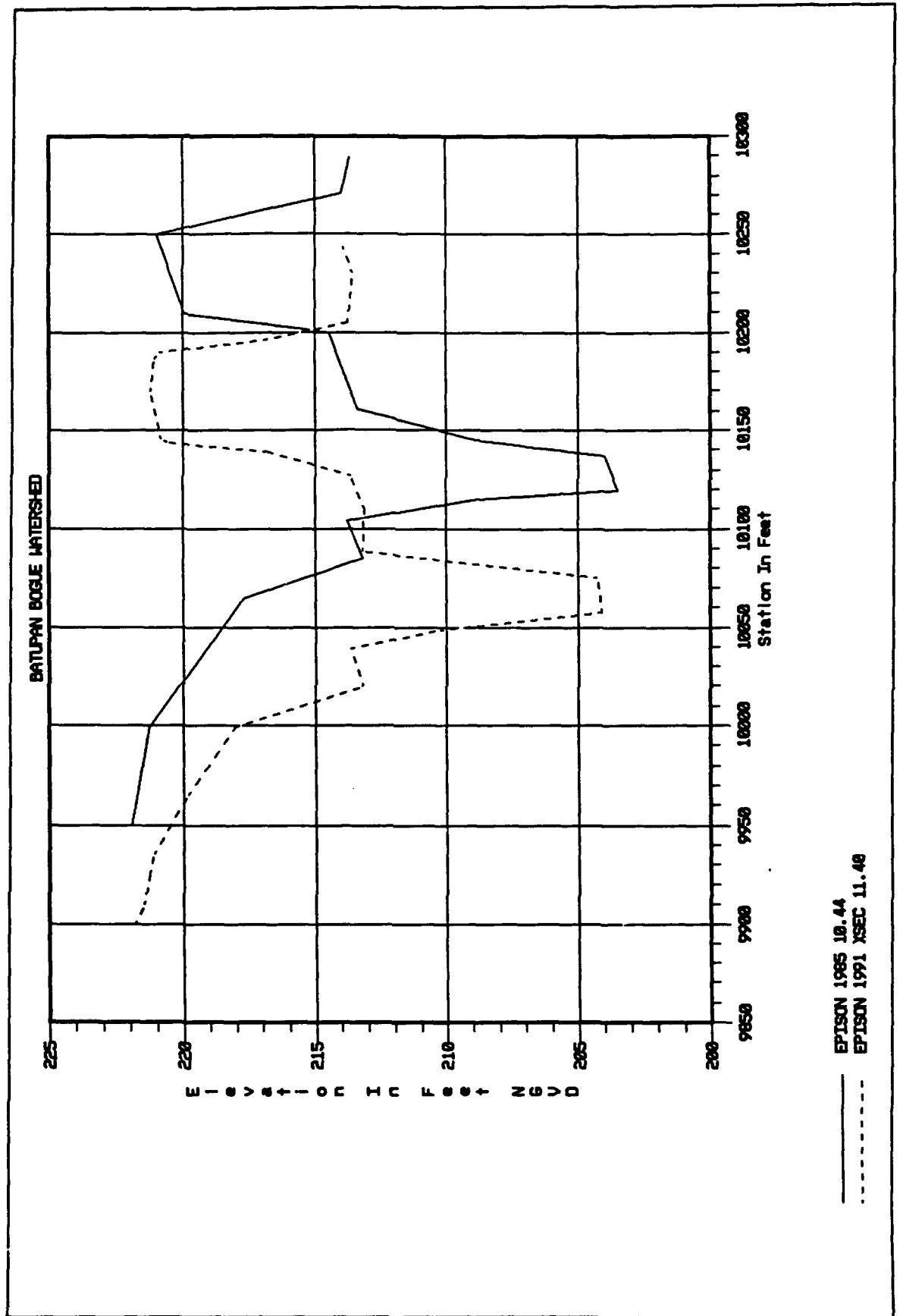


— CAMPBELL 1985 XSEC 115.00
- - - CAMPBELL 1991 XSEC 144.47

BATUPAN BOGLE WATERSHED



——— CAMPBELL 1965 XSEC 134.32
 - - - - - CAMPBELL 1991 XSEC 163.65



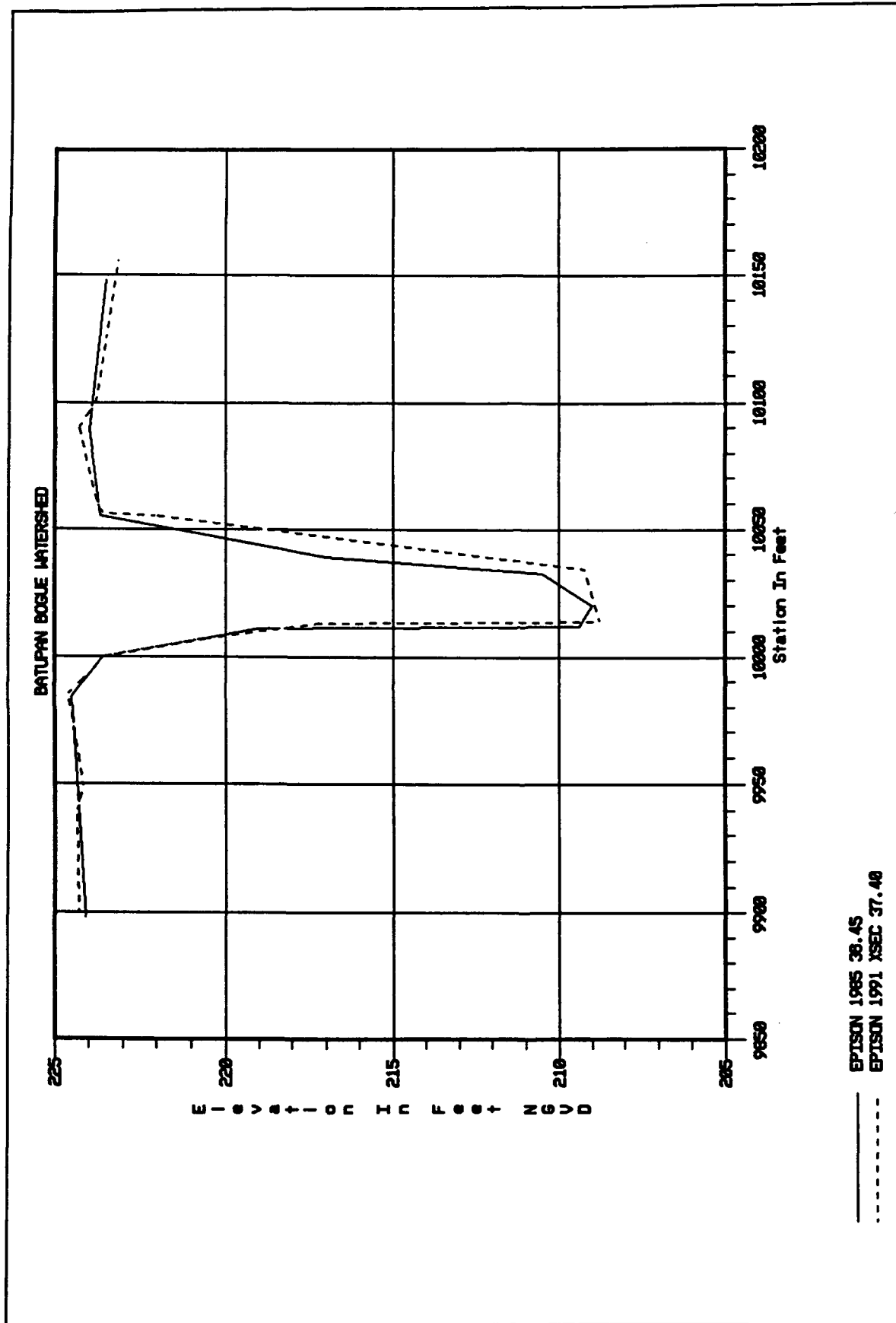
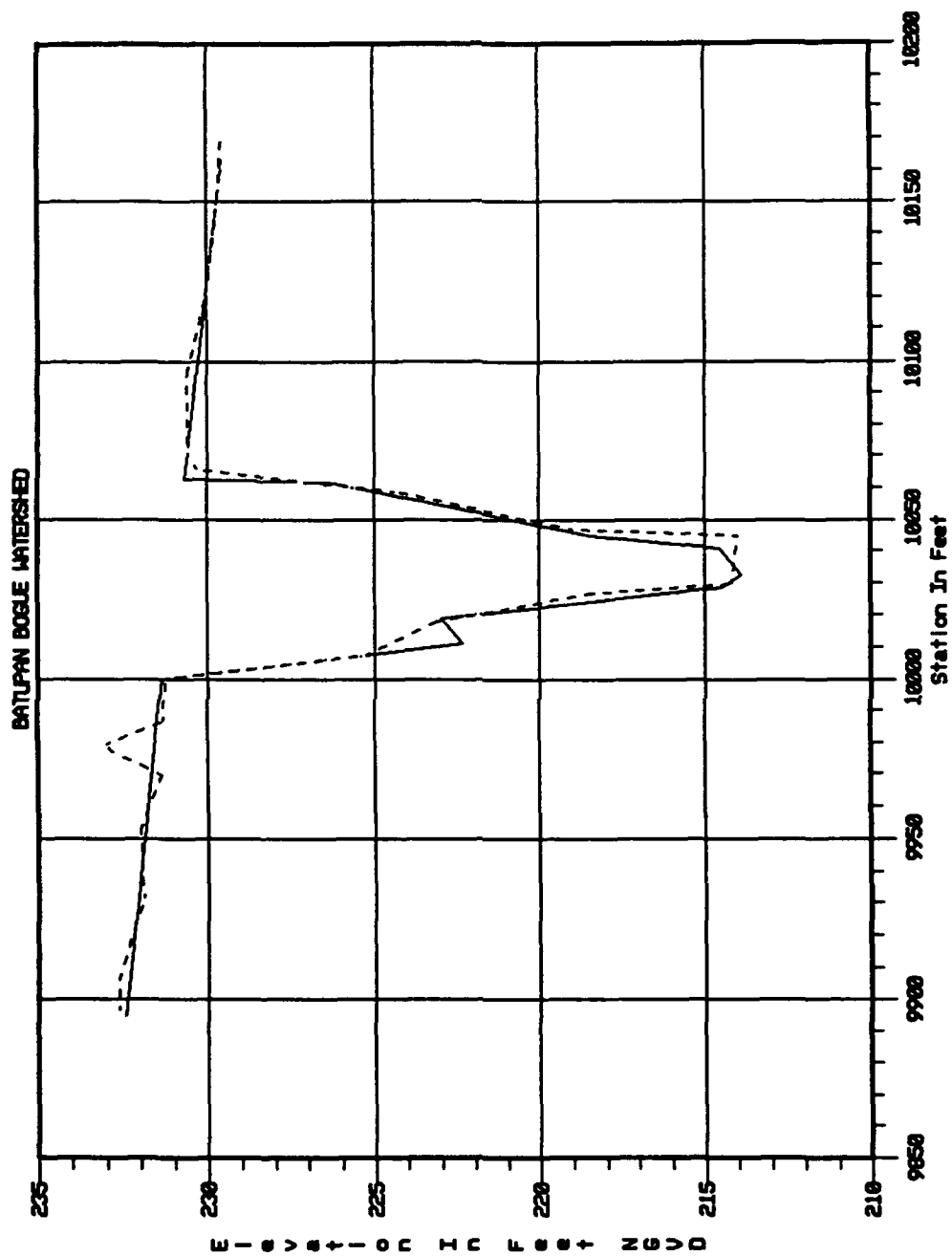


PLATE C262



—— EPISON 1985 81.47
----- EPISON 1991 XSEC 62.17

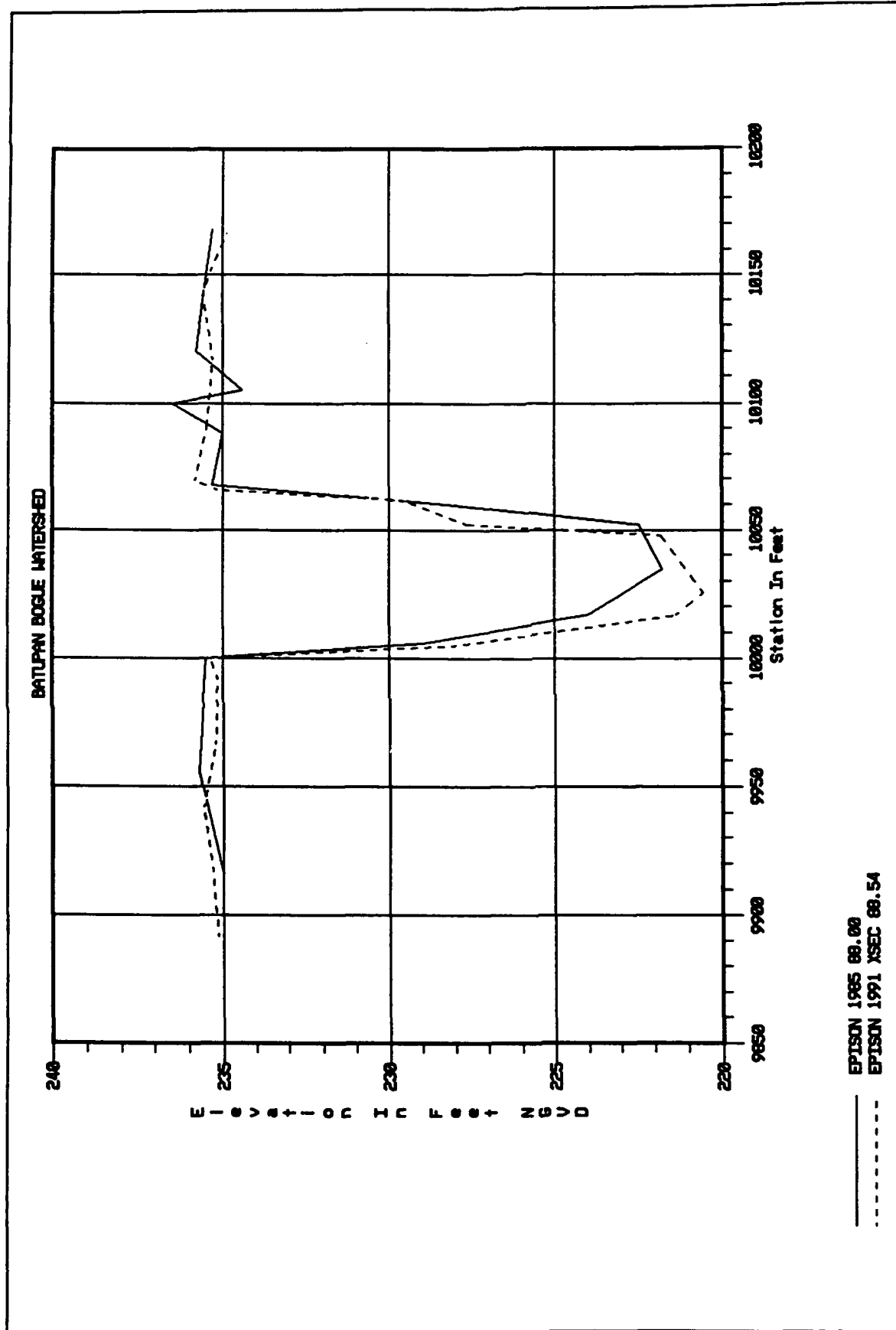
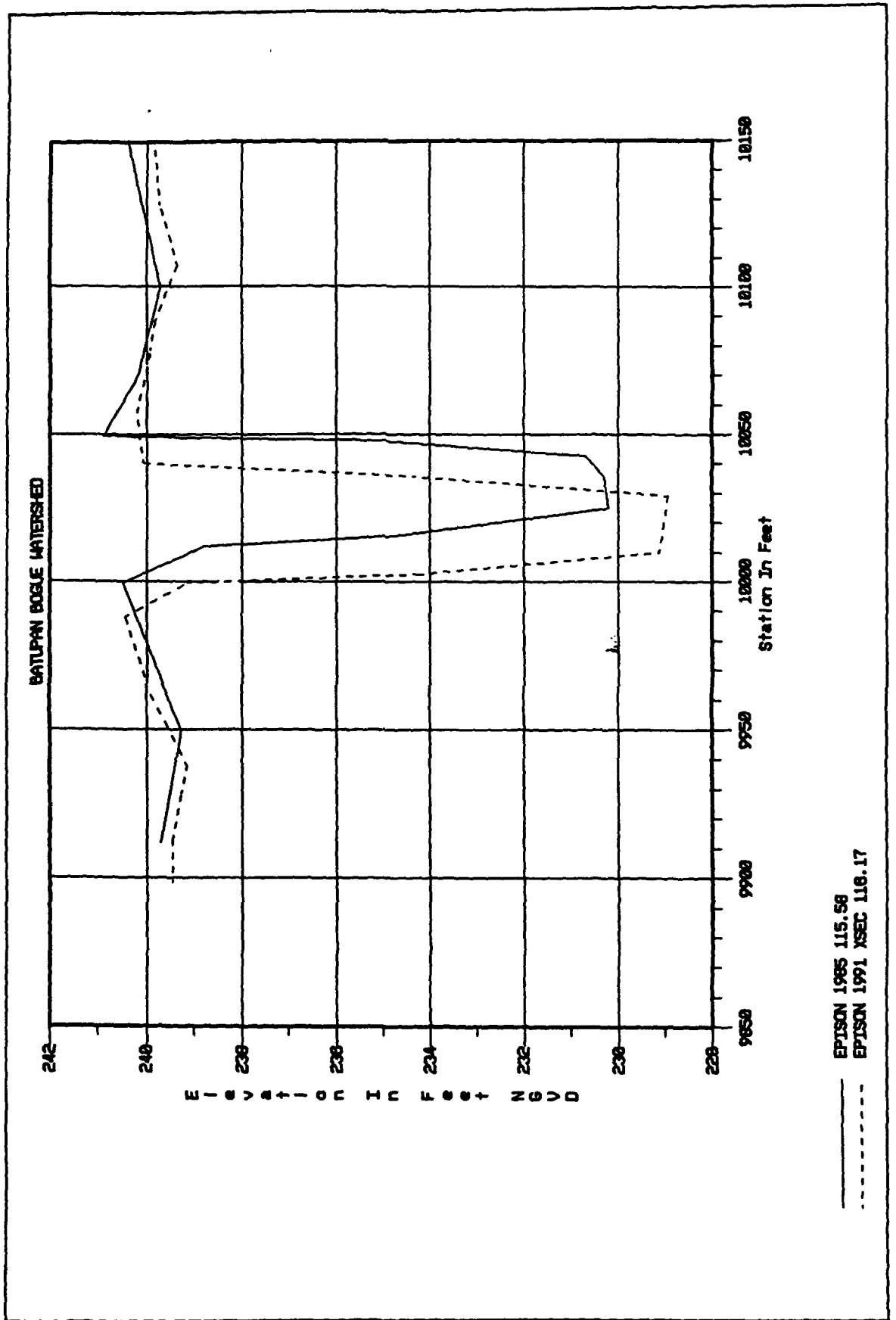
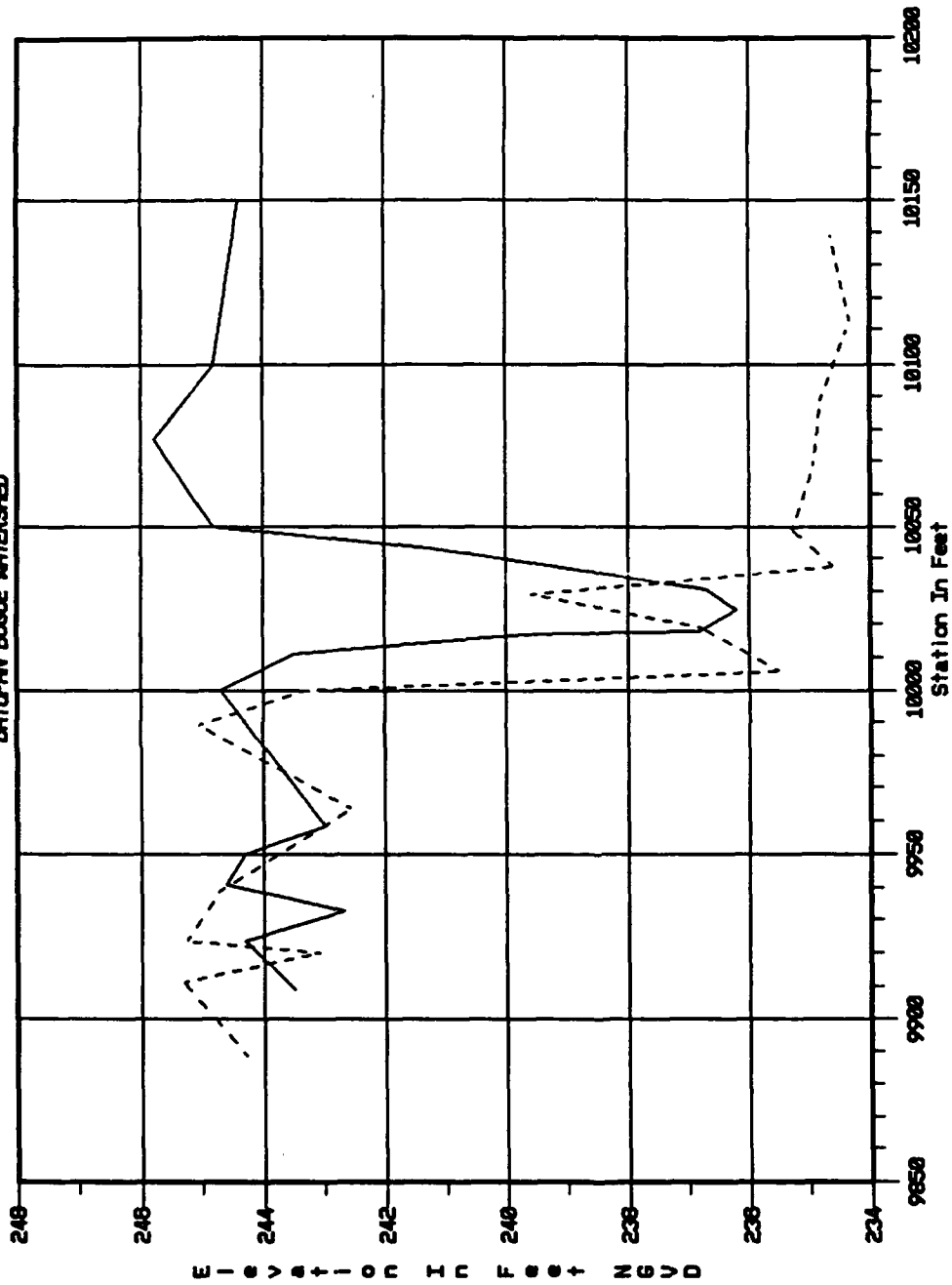


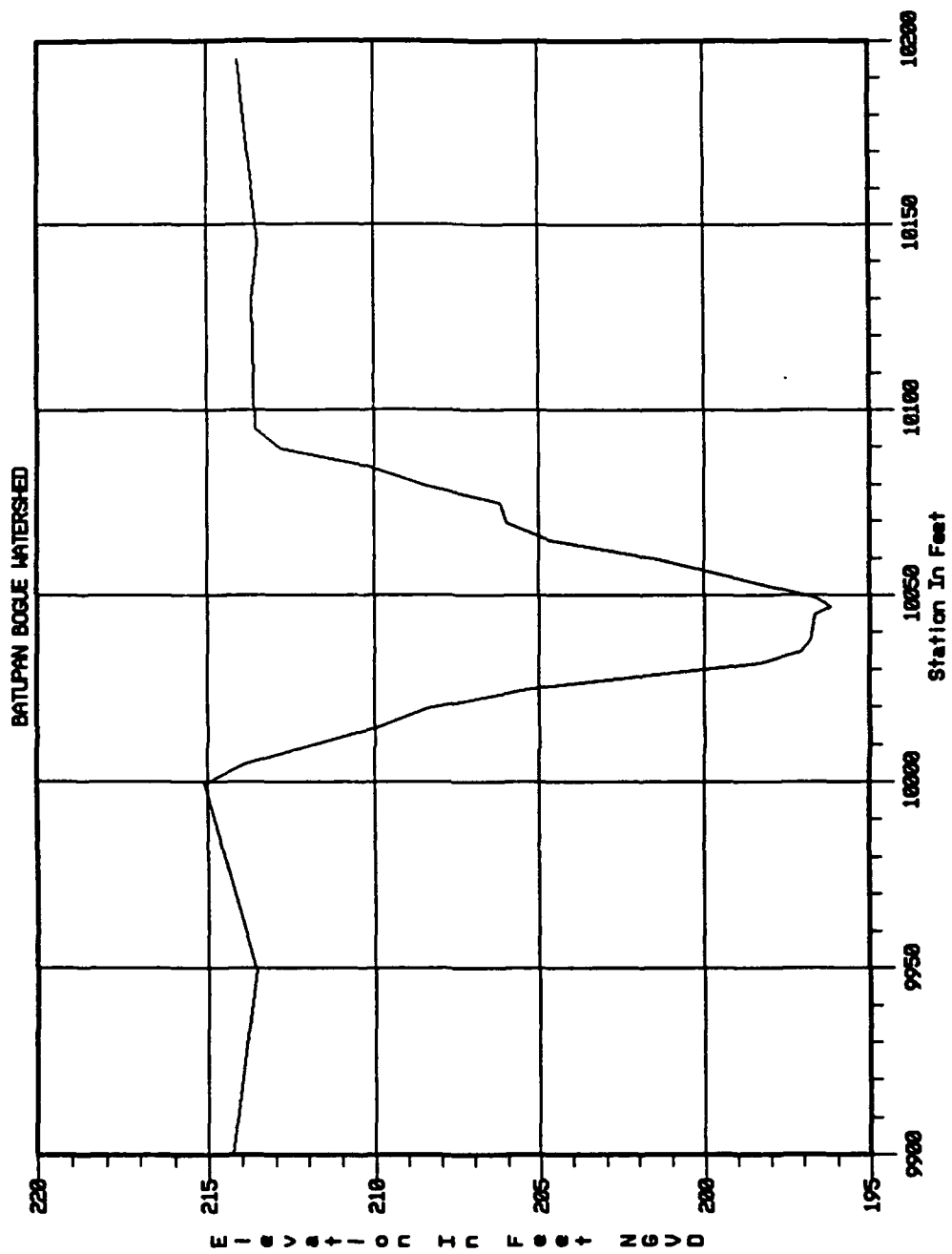
PLATE C264



BATUPAN BOGLE WATERSHED

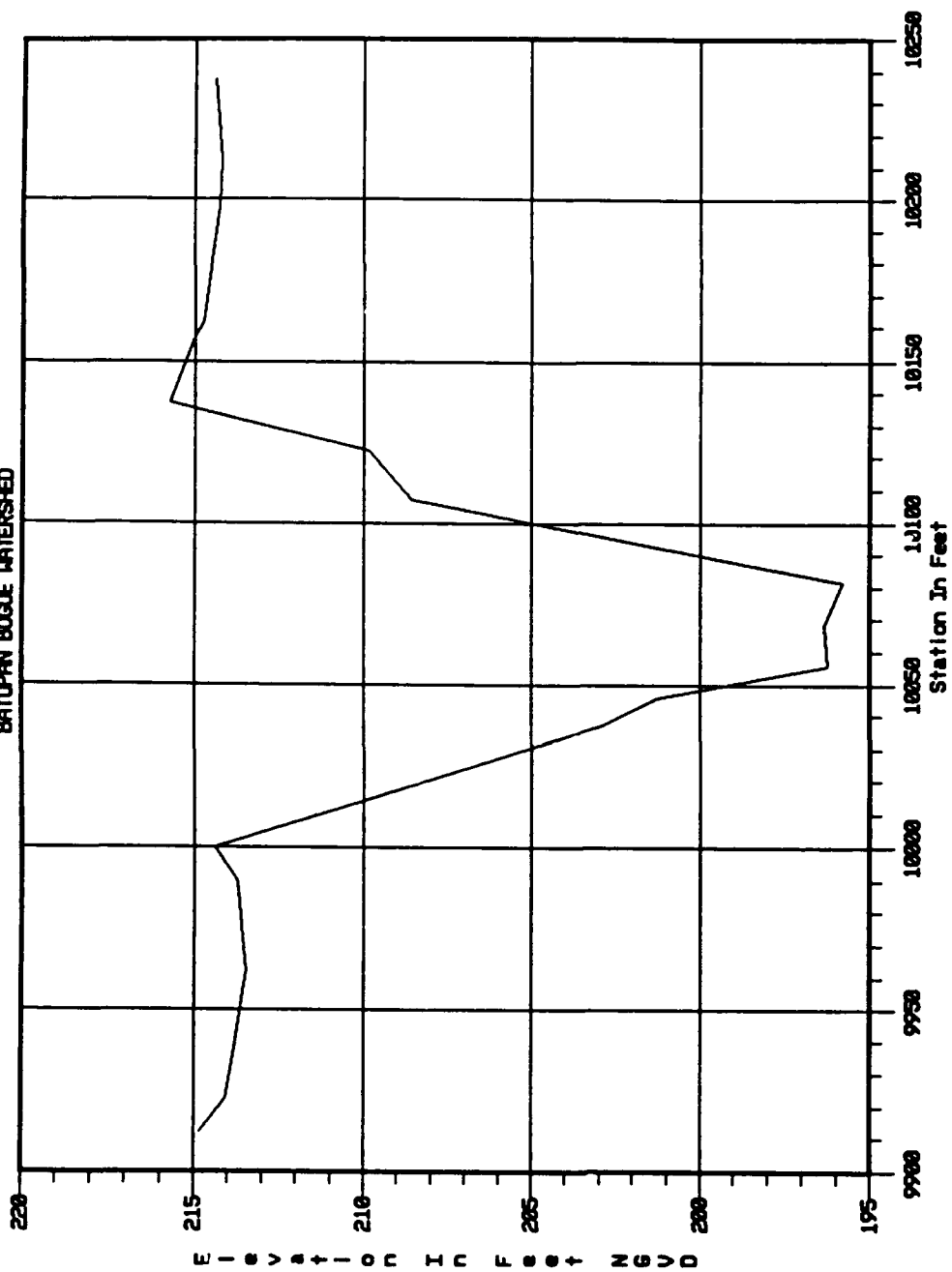


EPTISON 1985 144.67
 EPTISON 1991 XSEC 148.28

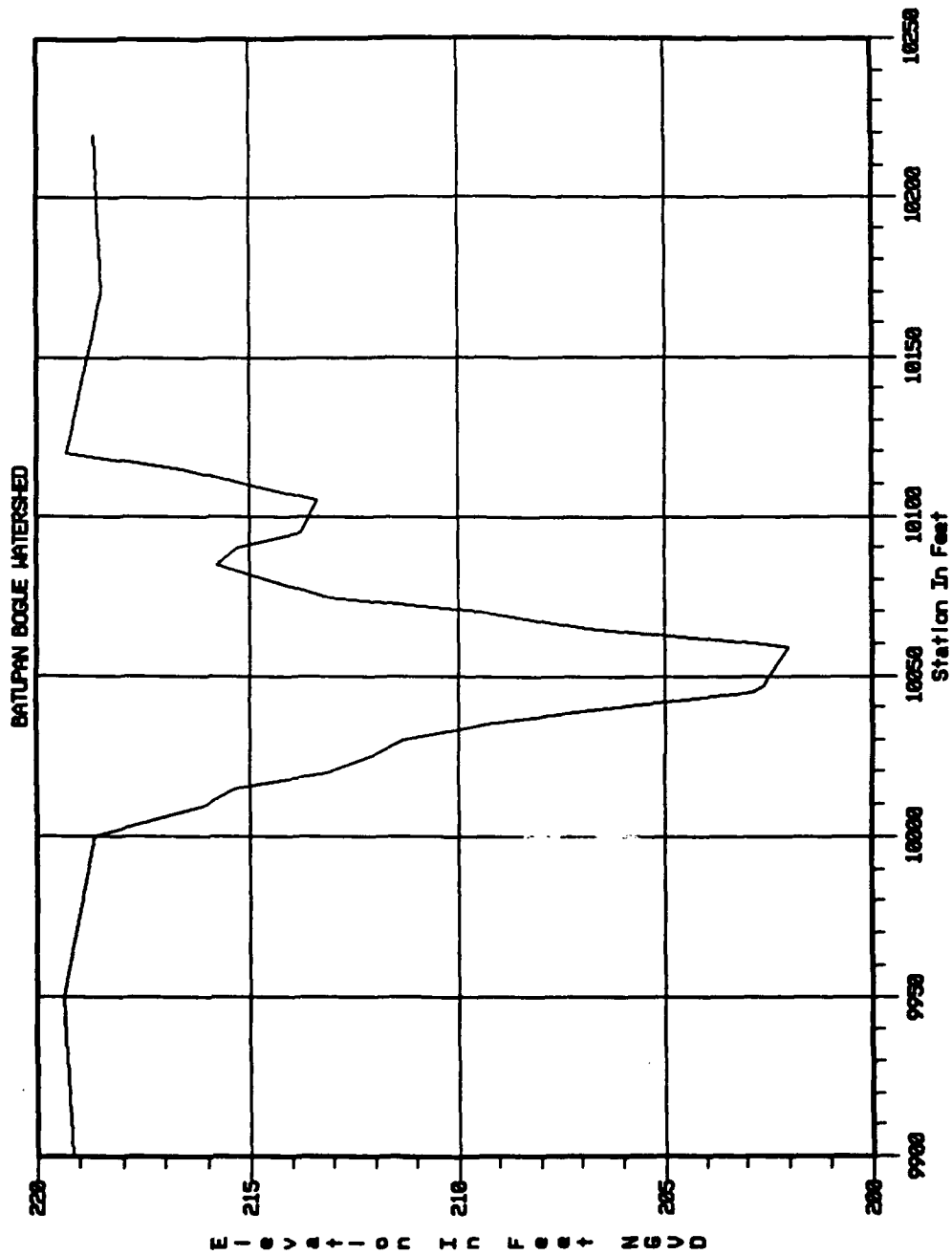


— CROWDER 1965 XSEC 7.78

BATUPAN BOQUE WATERSHED

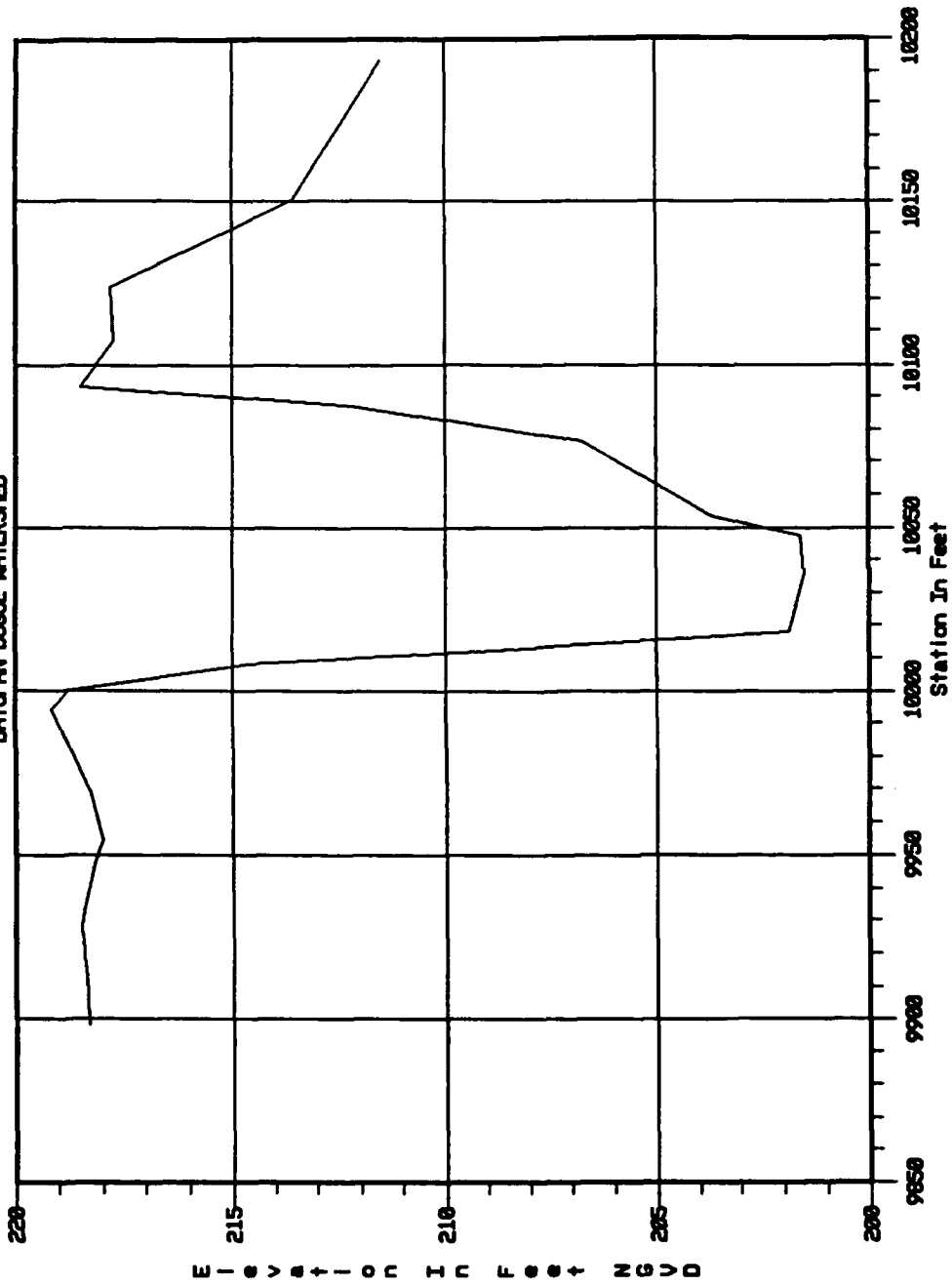


— CROUDER 1991 XSEC 7.93

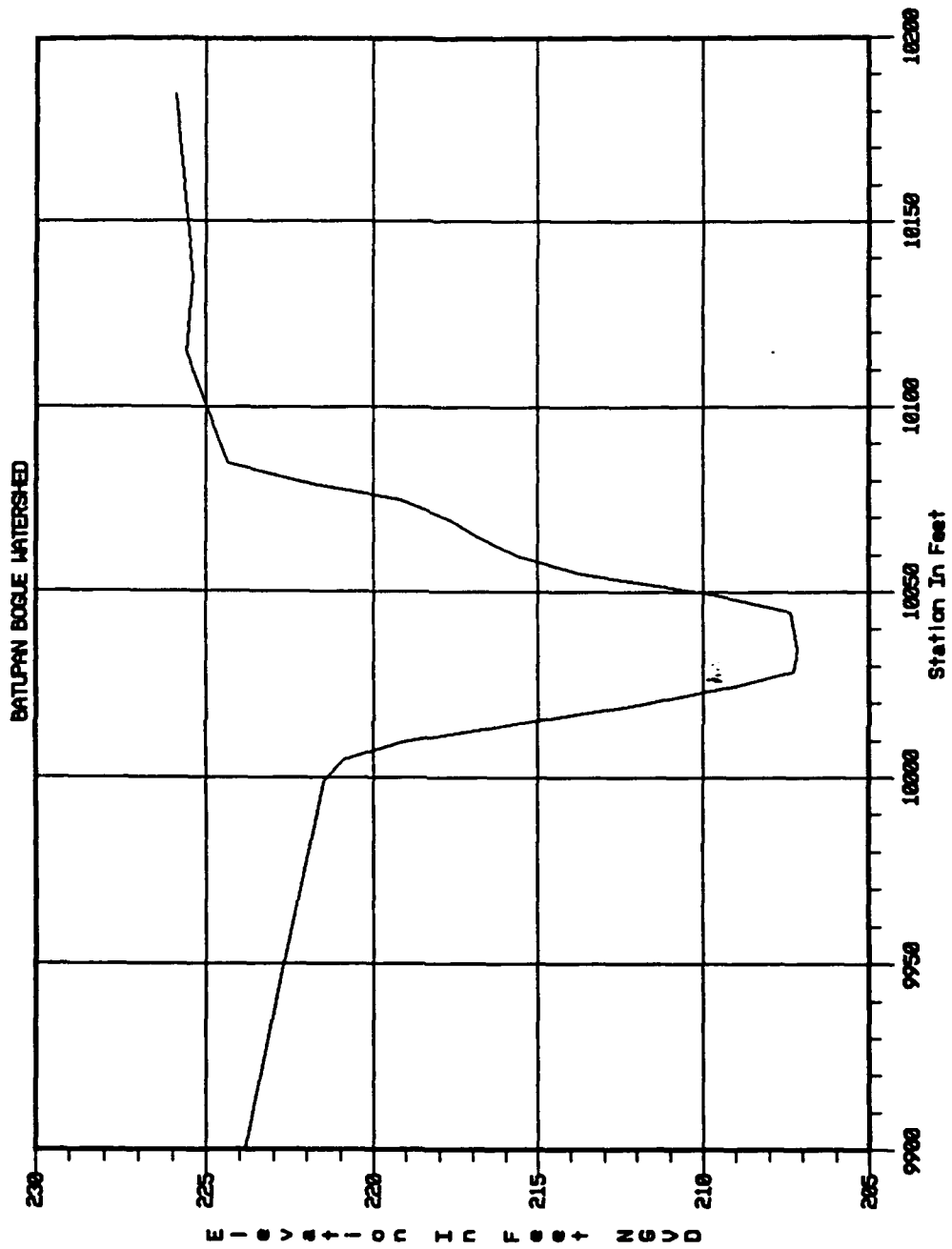


CROUDER 1965 XSEC 37.00

BATUPAN BOULE WATERSHED

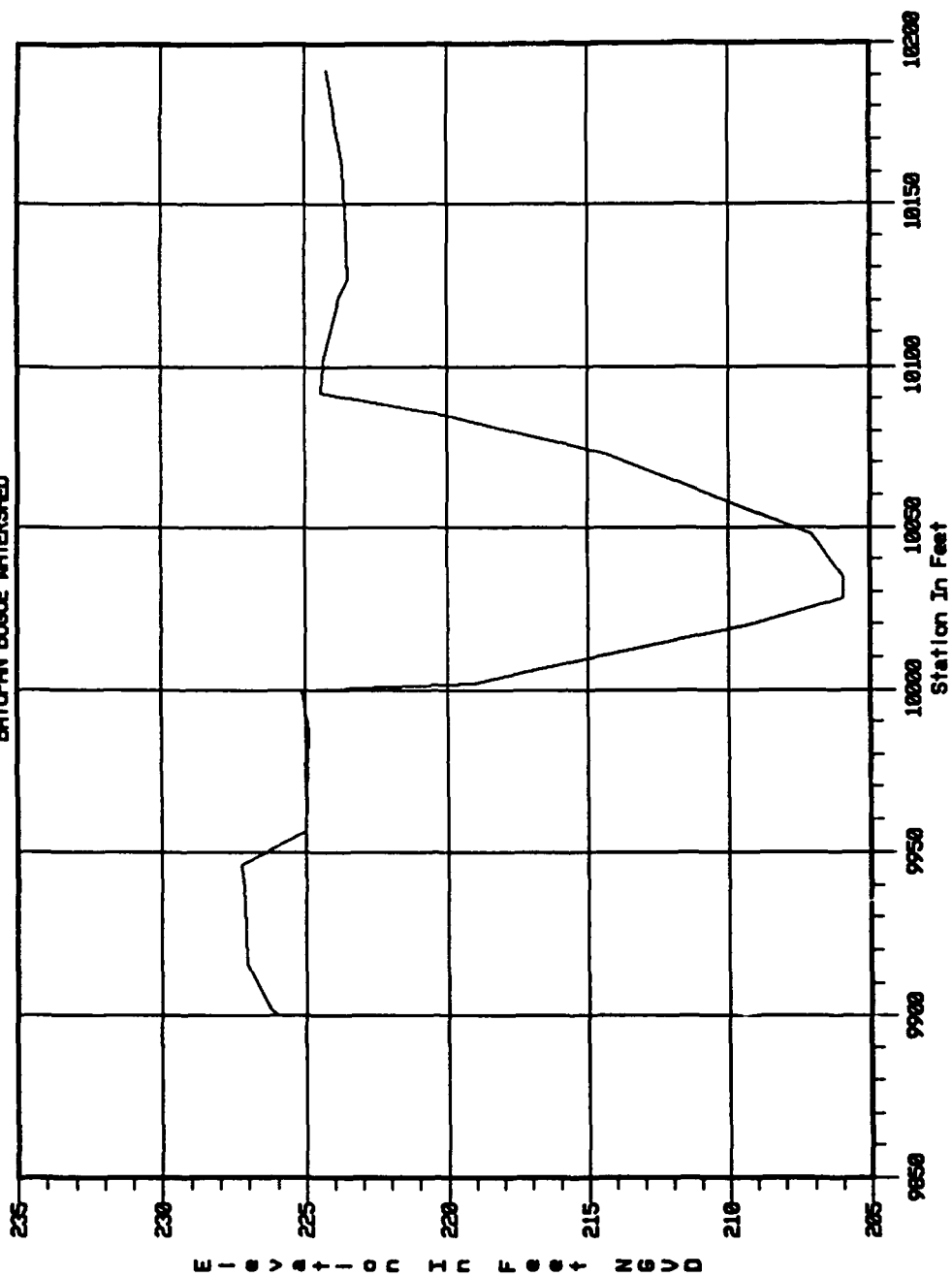


CRUMMER 1991 XSEC 37.00



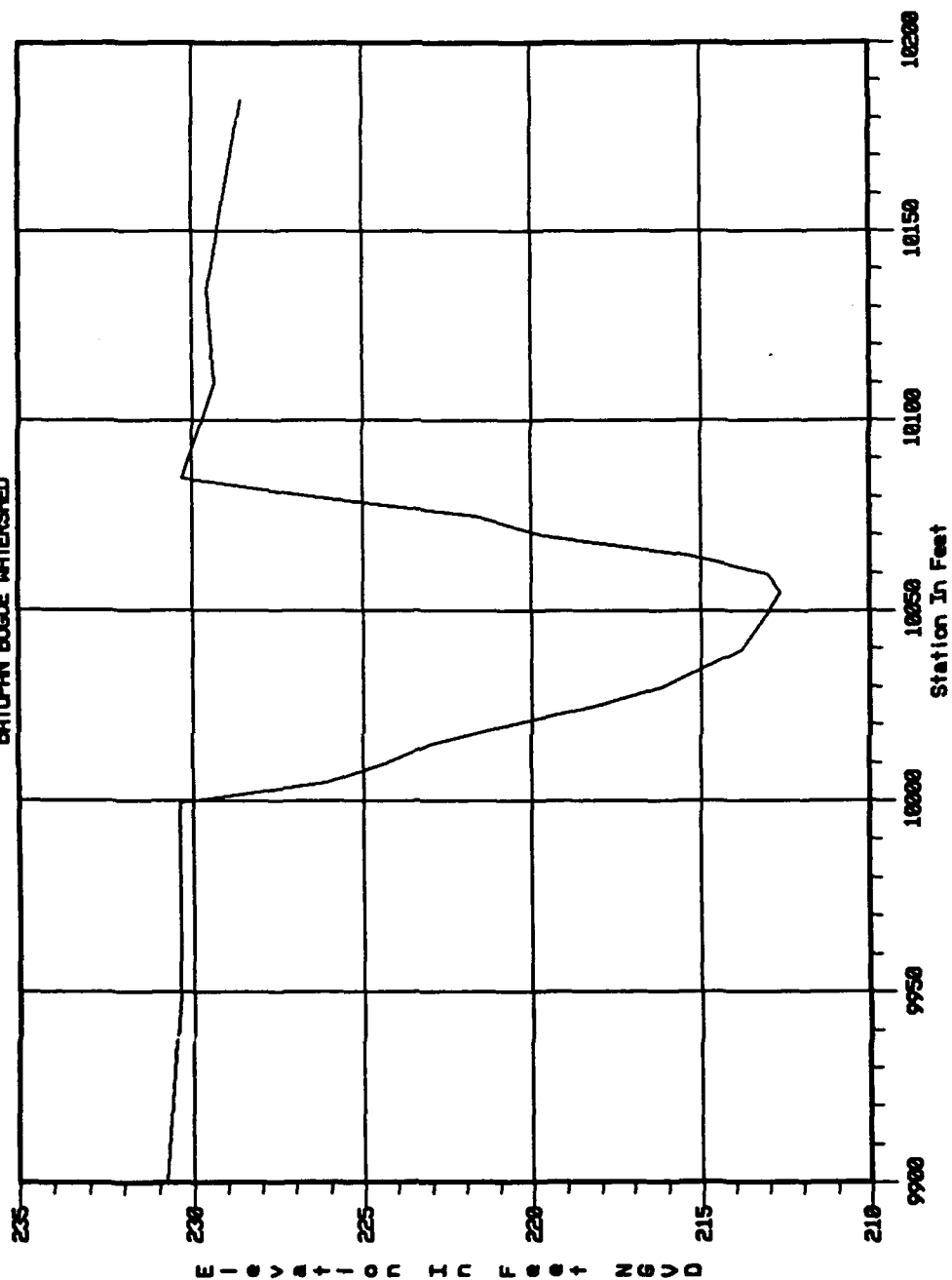
— CROWDER 1965 XSEC 83.70

BATUPAN BOGLE WATERSHED



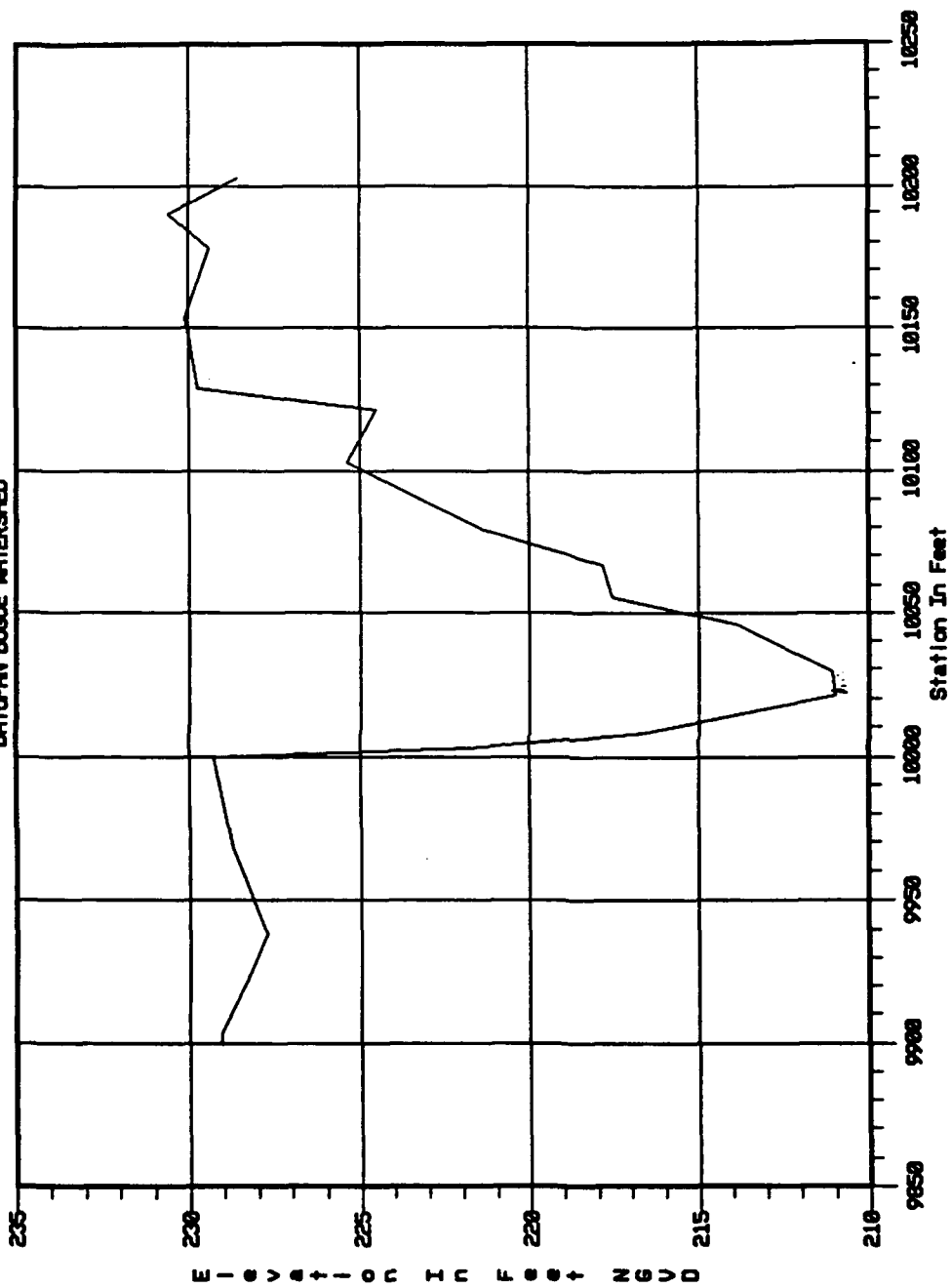
— CROWDER 1991 XSEC 63.78

BATUPAN BOGLE WATERSHED

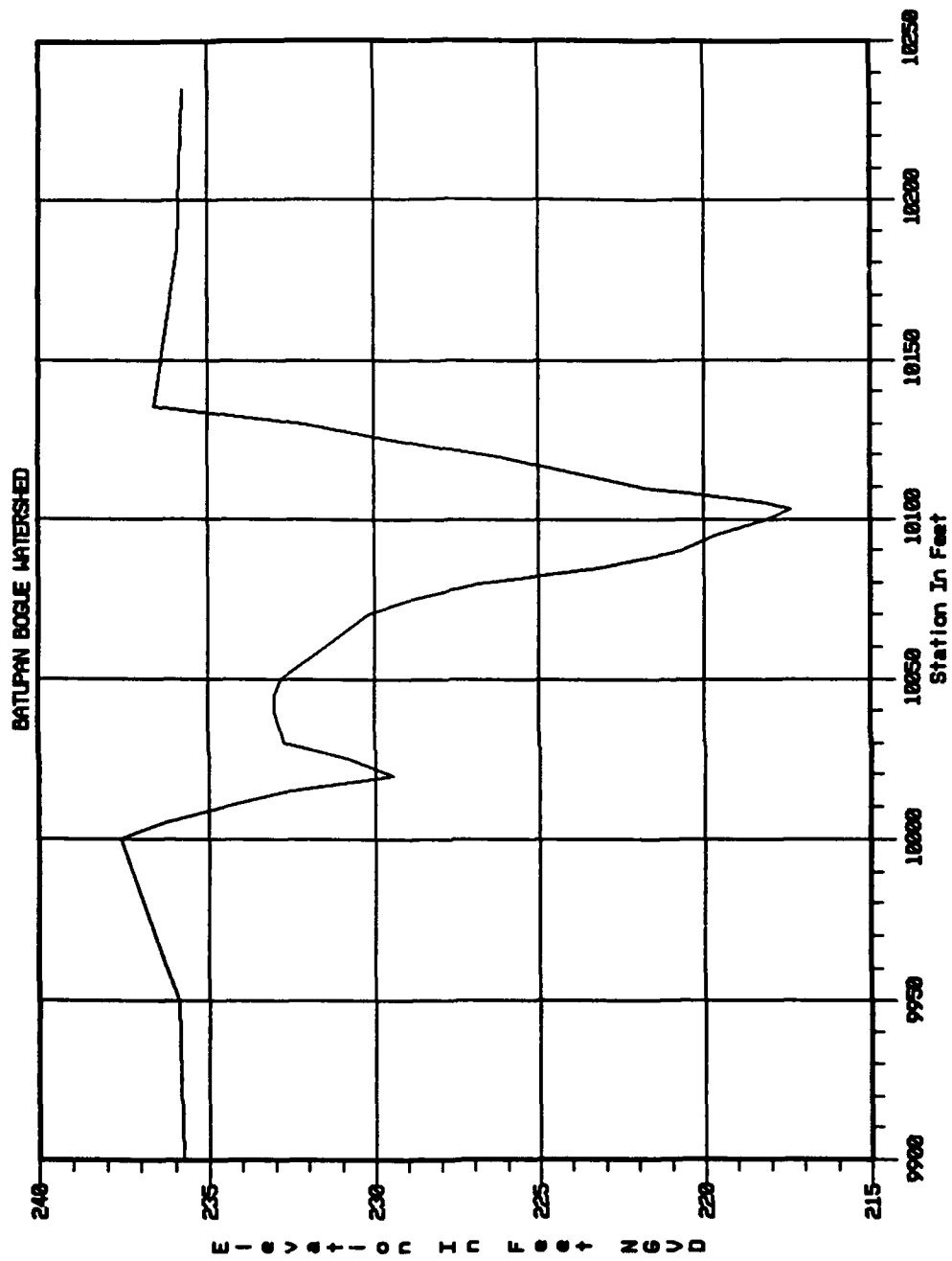


ORDER 1985 XSEC 92.33

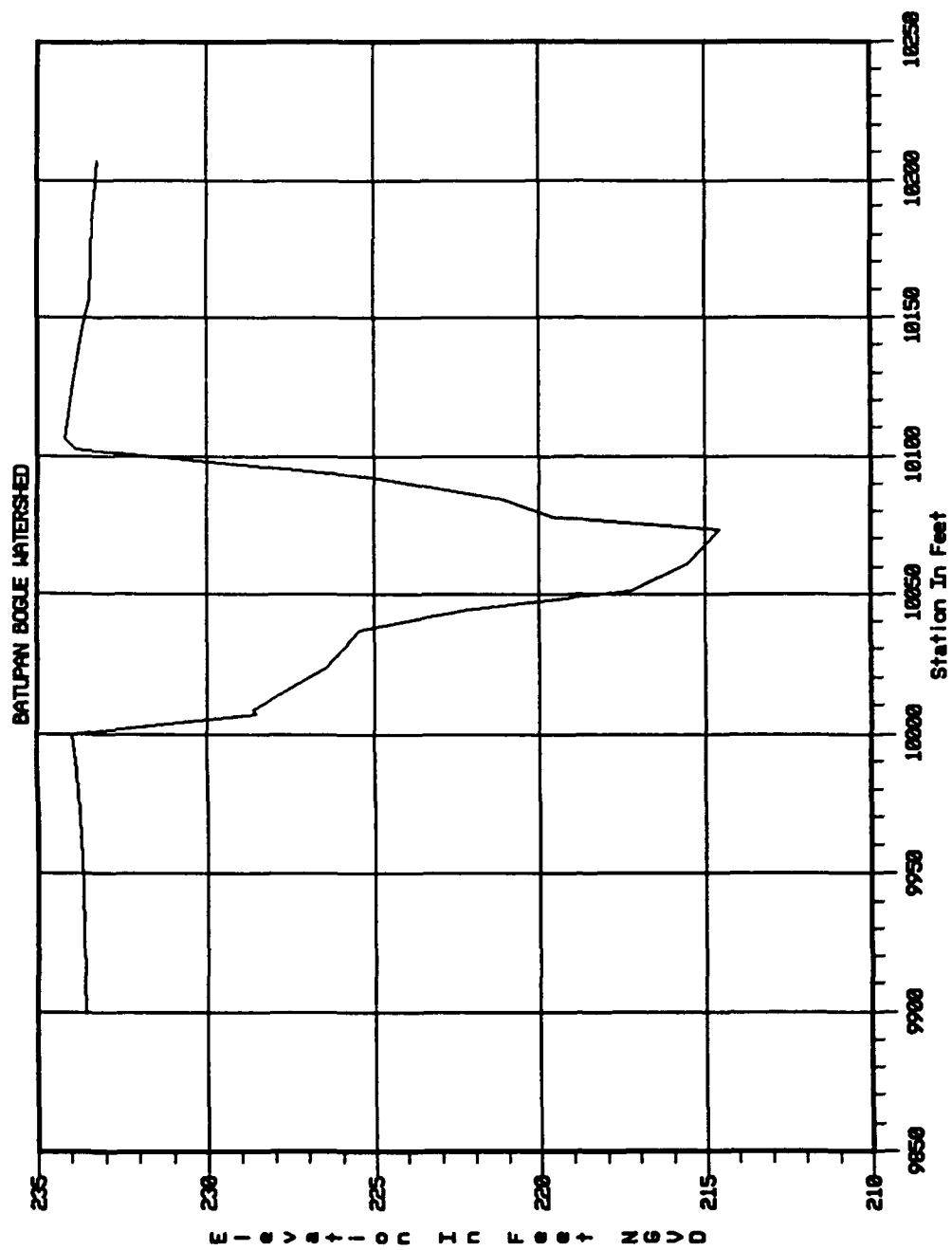
BATUPAN BOGLE WATERSHED



— CROWDER 1991 XSEC 92.75

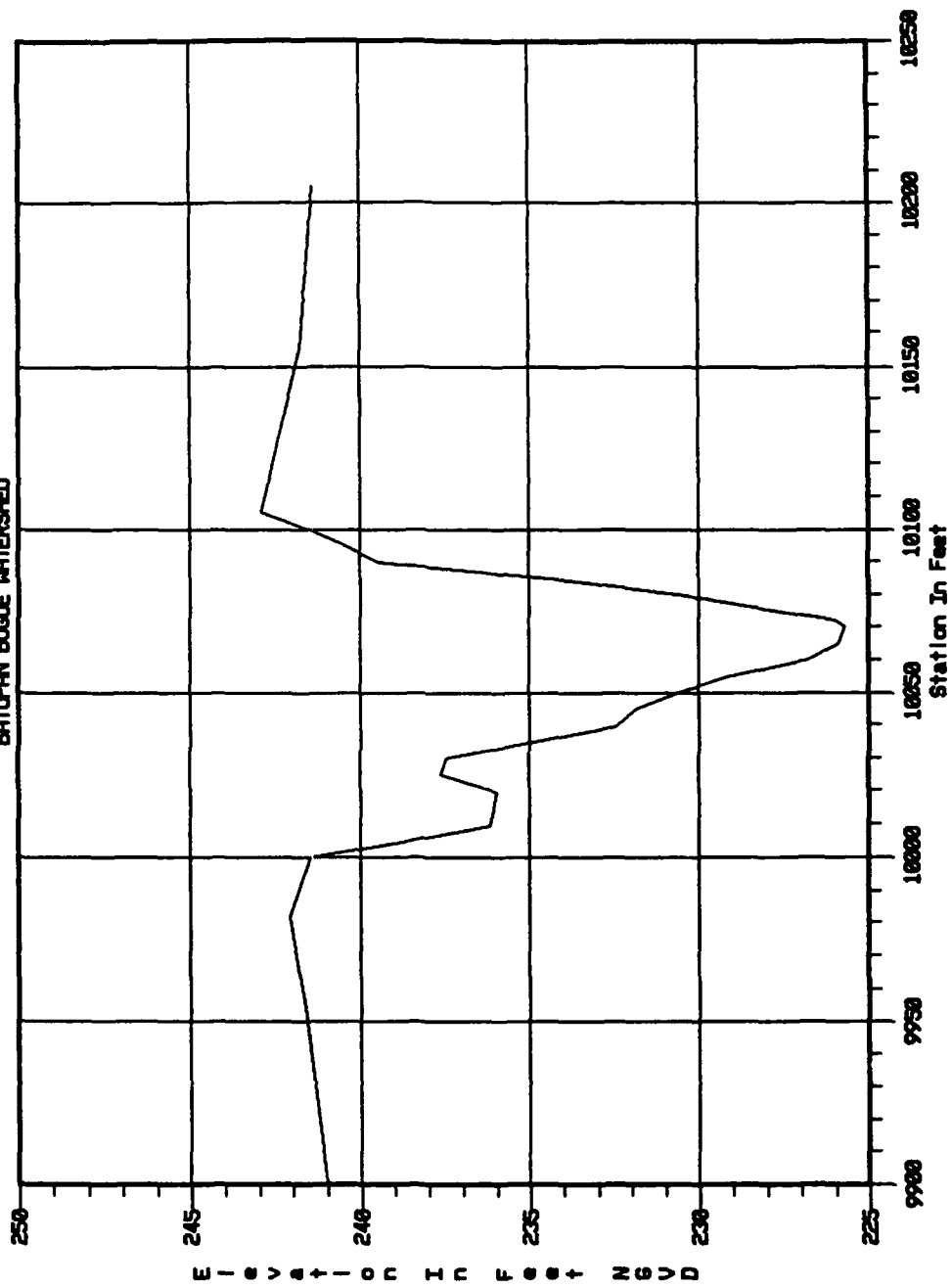


— CROWDER 1985 XSEC 118.79



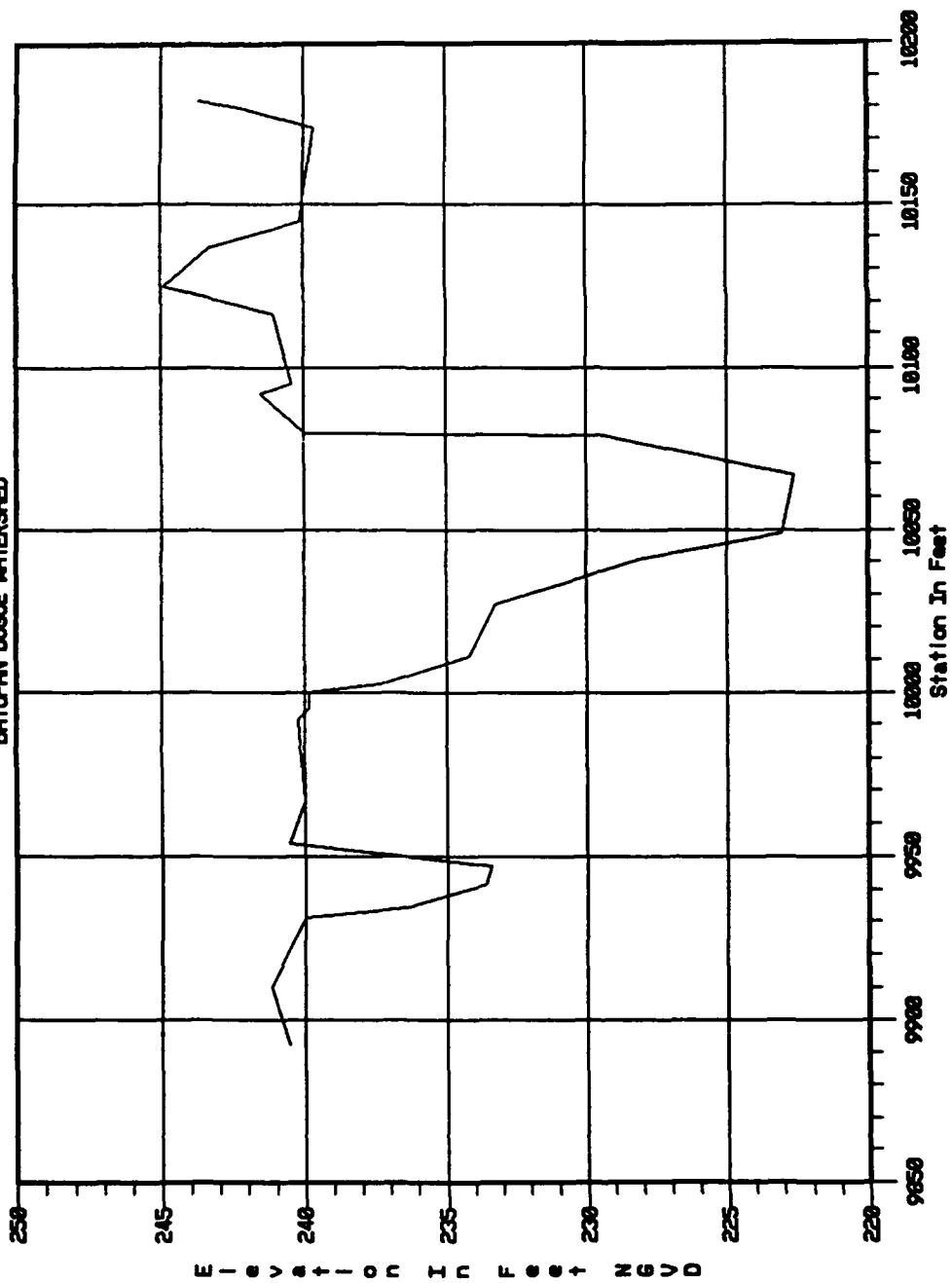
CROJDER 1991 XSEC 118.79

BATUPAN BOGLE WATERSHED

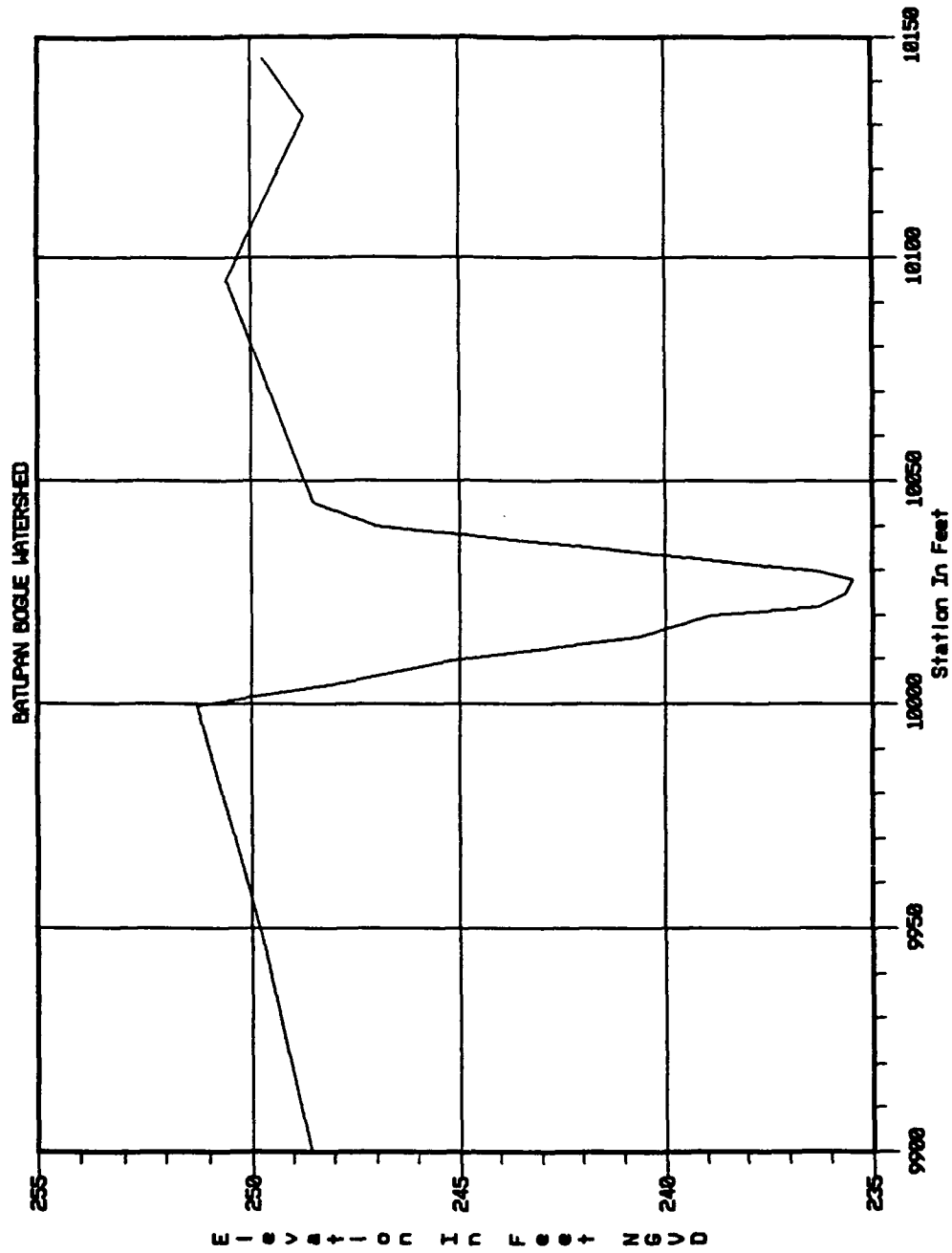


— CROWDER 1985 XSEC 148.85

BATUPAN BOULE WATERSHED

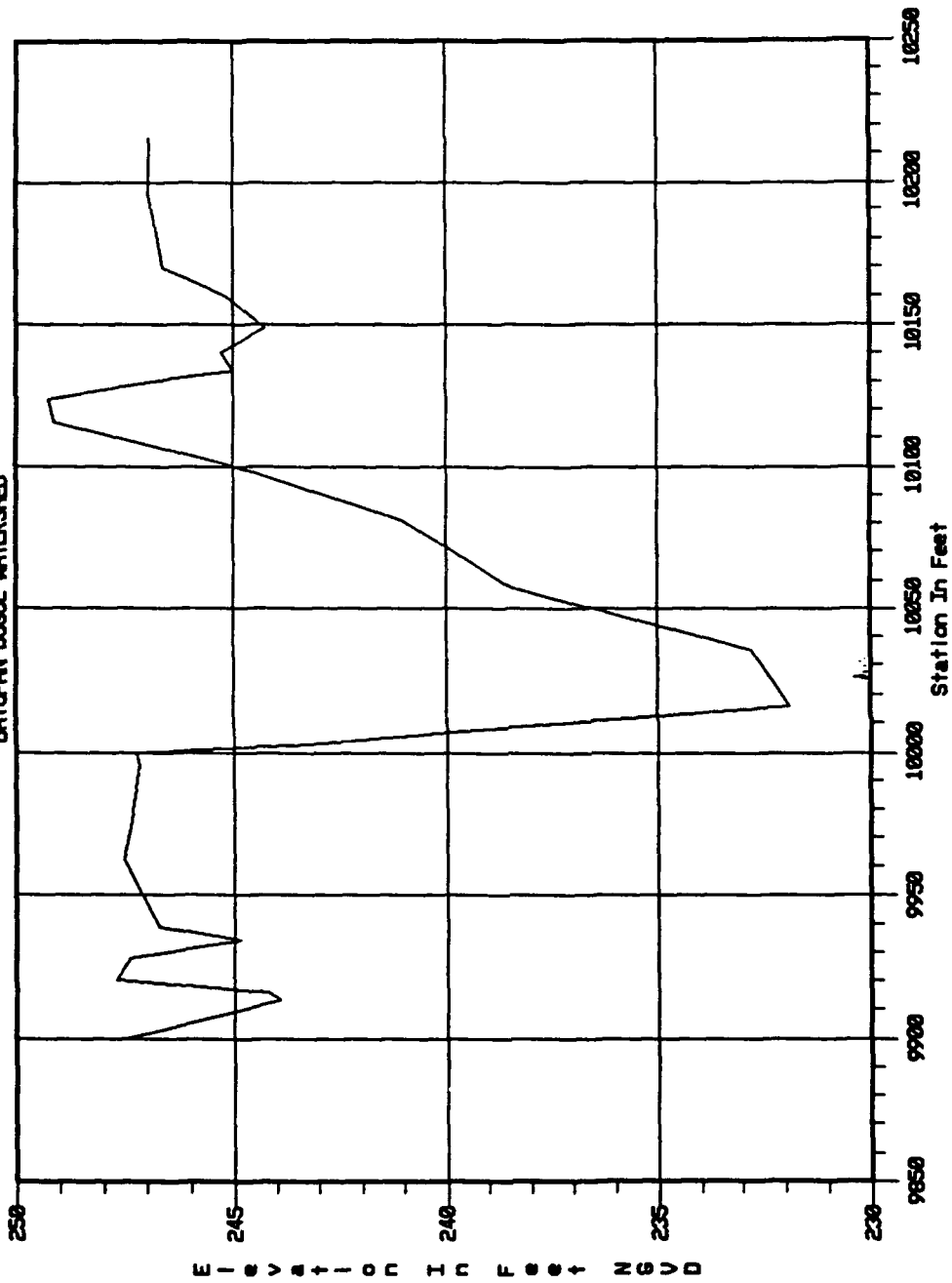


CRUDER 1991 XSEC 147.00

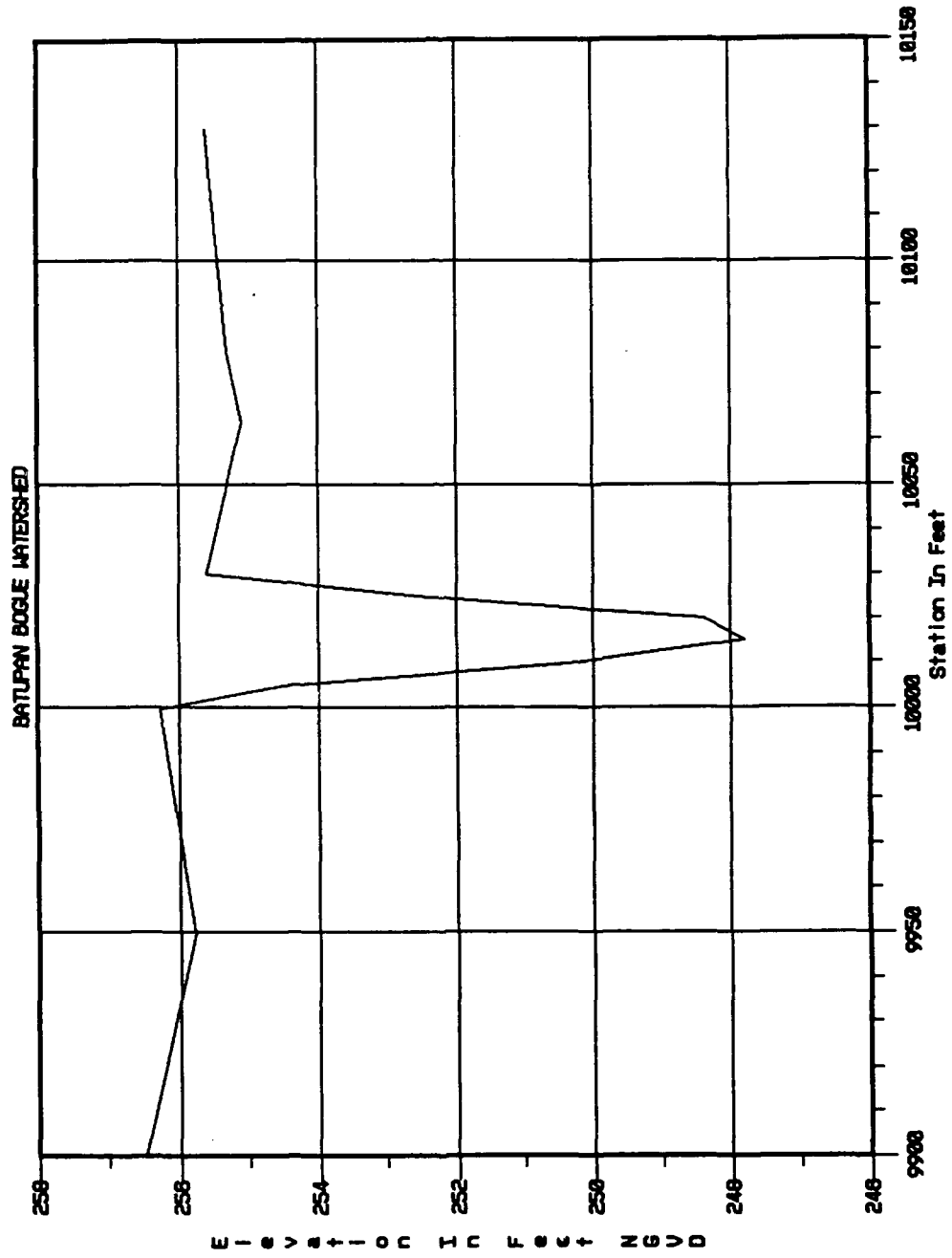


— CROUDER 1985 XSEC 173.00

BATUPAN BOQUE WATERSHED

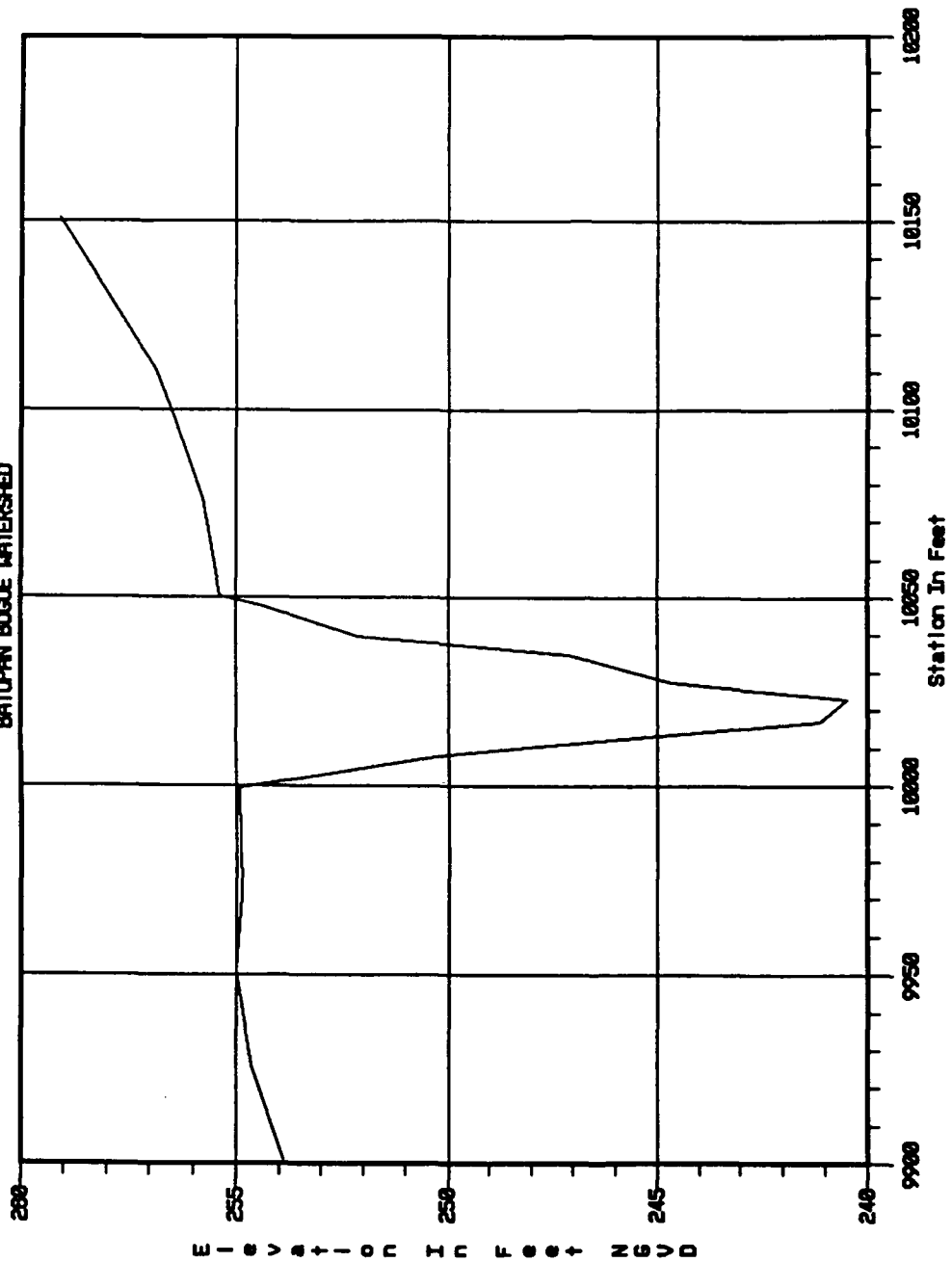


CROWDER 1991 XSEC 173.00



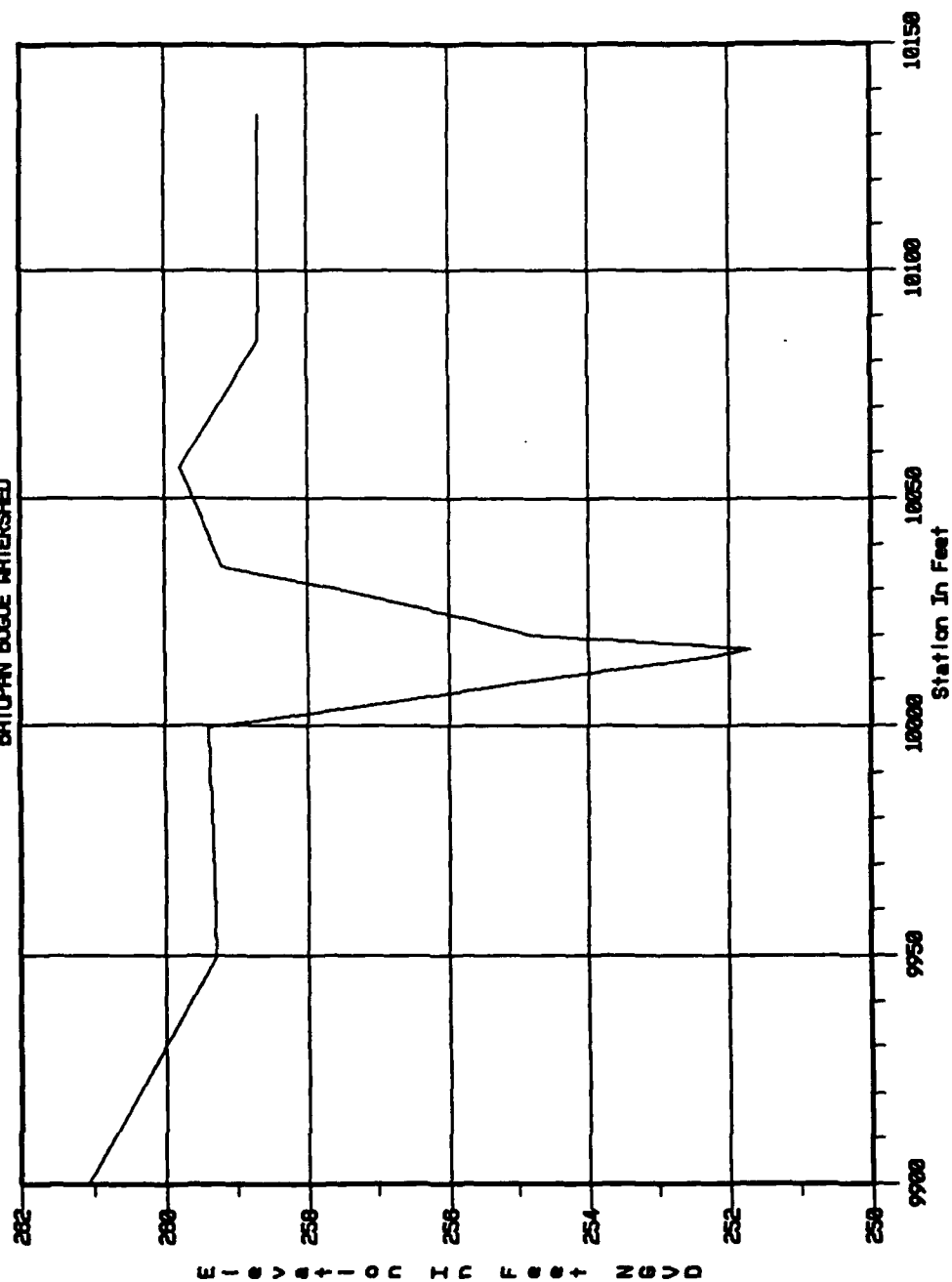
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BATUPAN BOULE WATERSHED



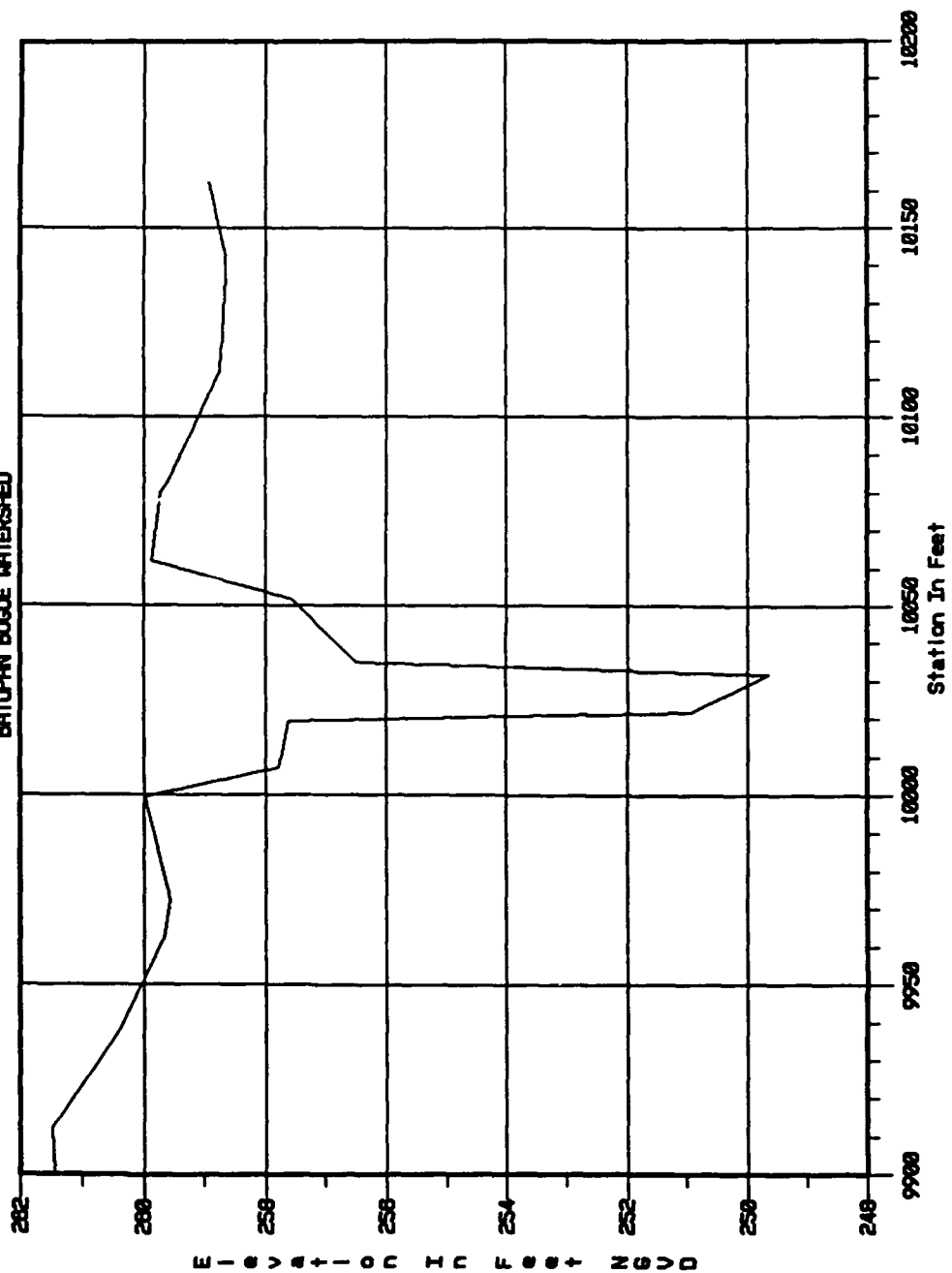
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BATUPAN BOGUE WATERSHED



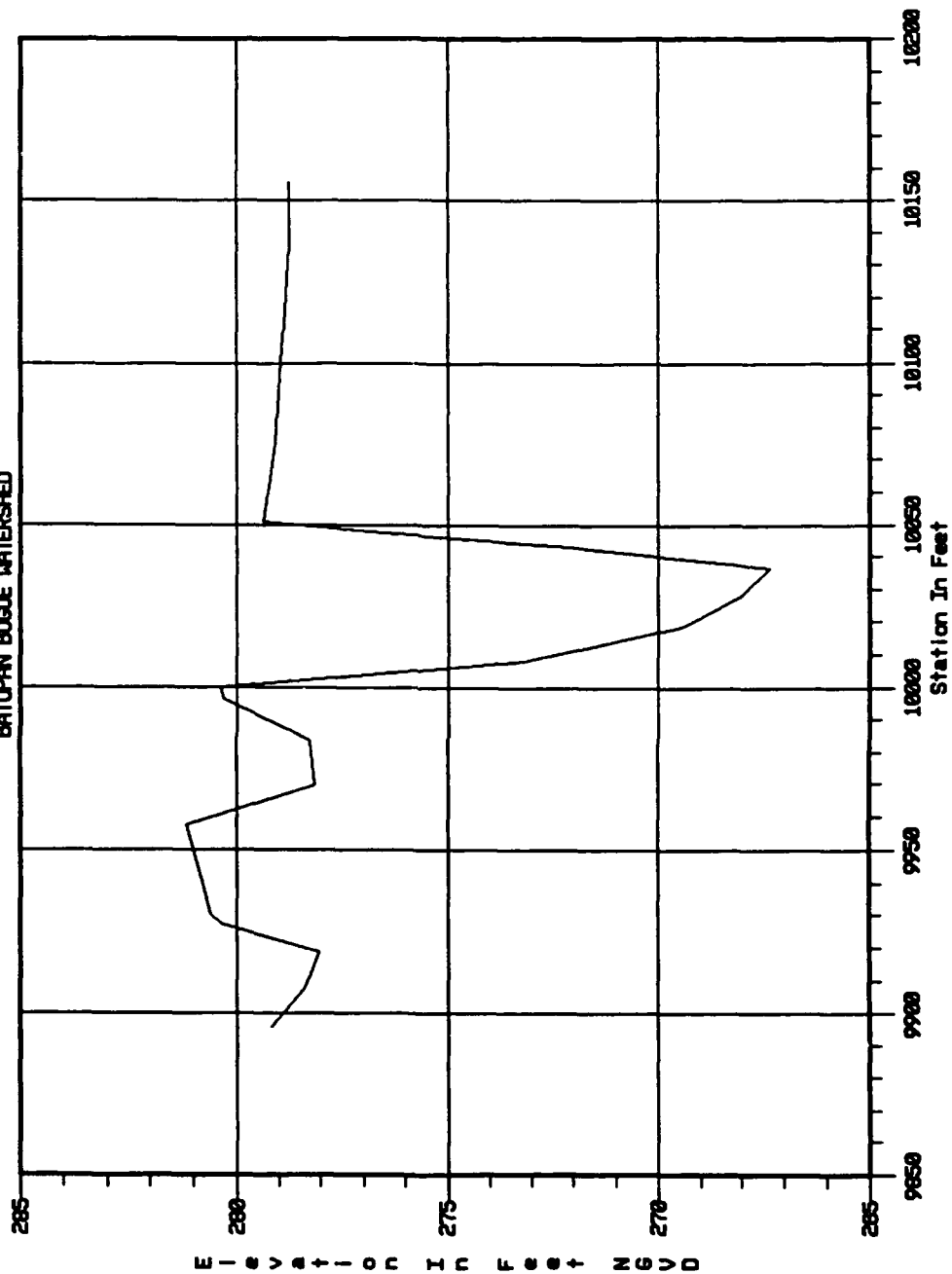
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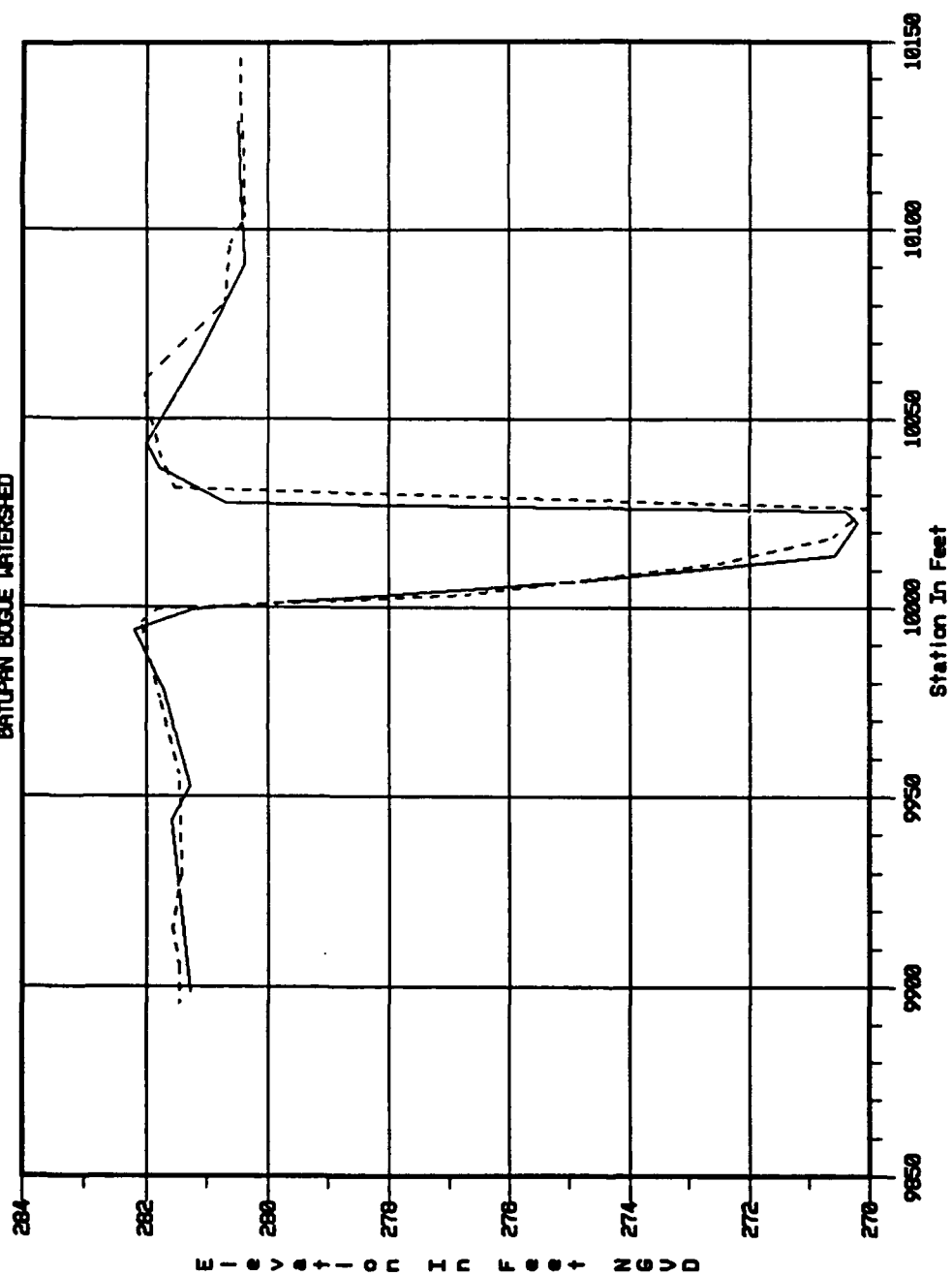
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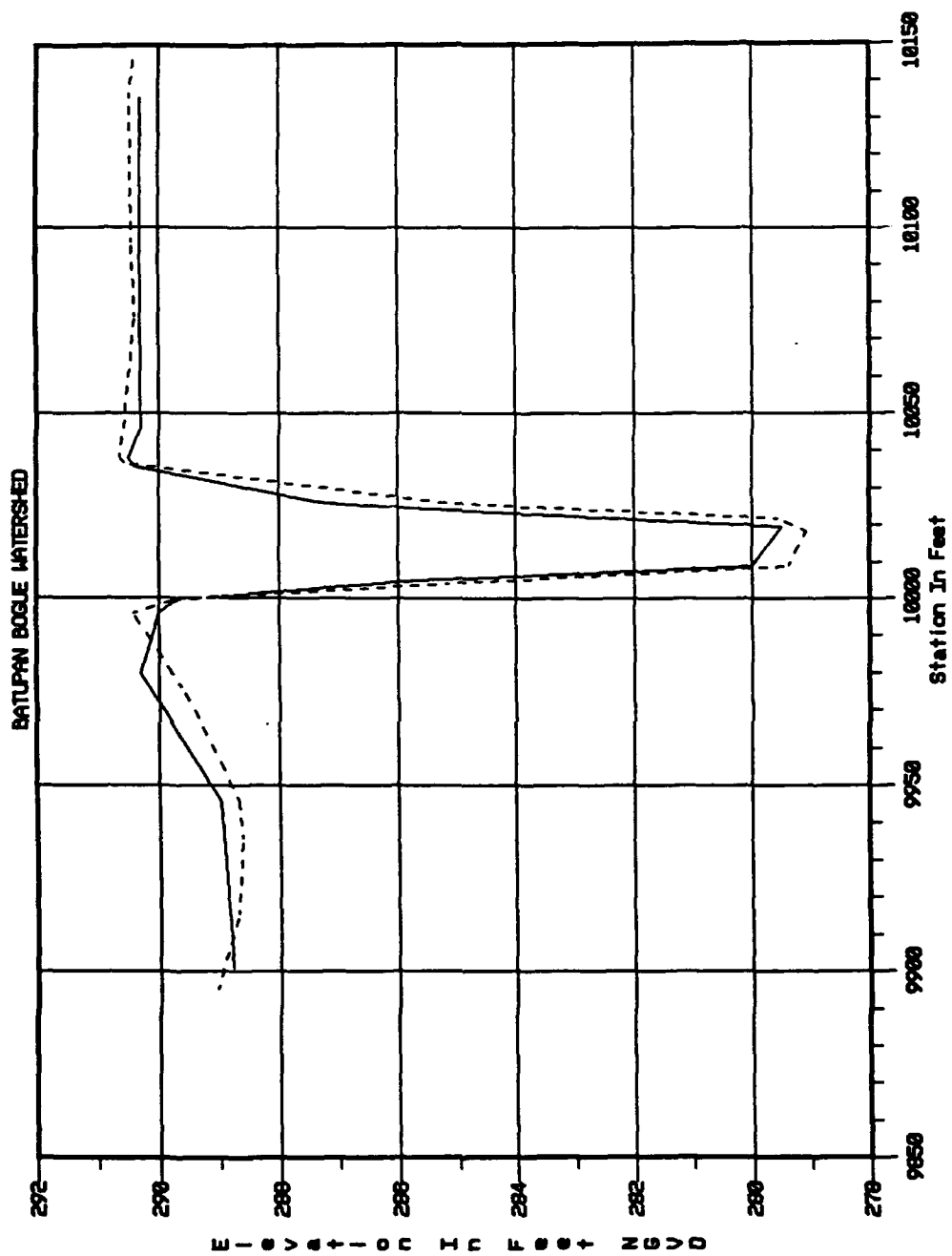


— LITTLE MOUSE 1991 XSEC 4.00

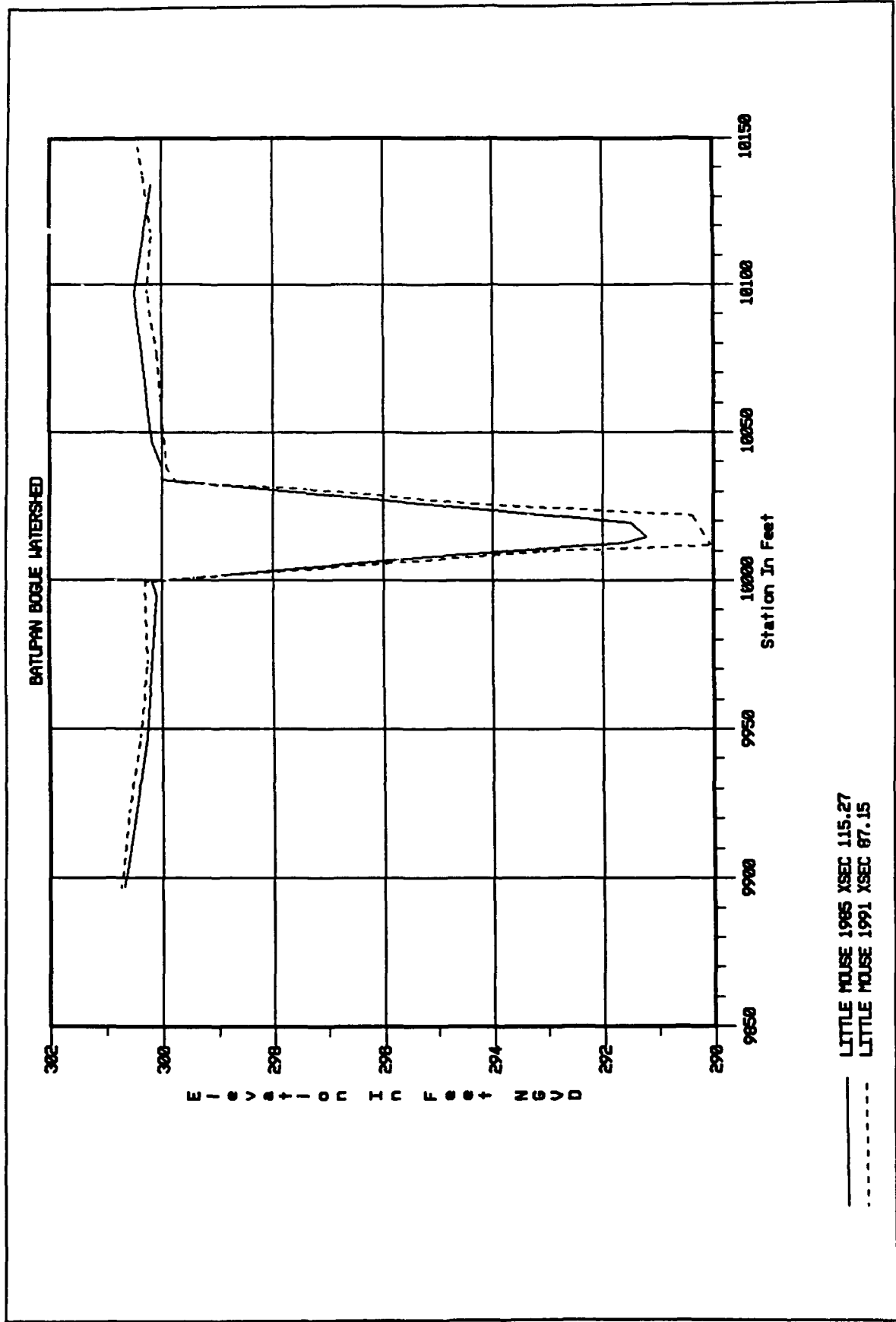
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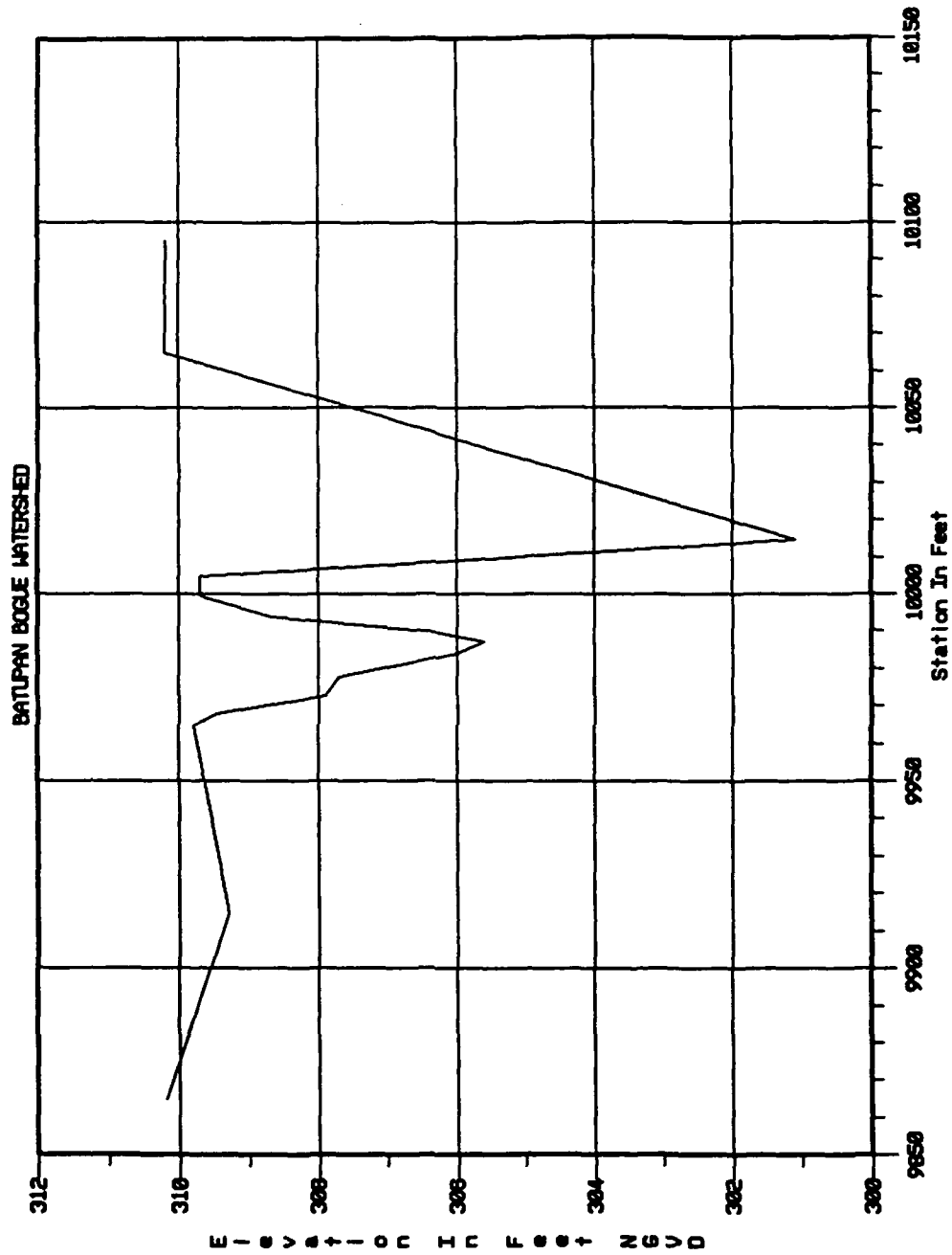


——— LITTLE MOUSE 1985 XSEC 42.05
 - - - LITTLE MOUSE 1991 XSEC 14.08



— LITTLE MOUSE 1985 XSEC 70.88
- - - LITTLE MOUSE 1991 XSEC 42.64





——— LITTLE MOUSE 1985 XSEC 182.22

REPORT DOCUMENTATION PAGE			Form Approved OMB No. 0704-0188	
<small>Public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302, and to the Office of Management and Budget, Paperwork Reduction Project (0704-0188), Washington, DC 20503.</small>				
1. AGENCY USE ONLY (Leave blank)		2. REPORT DATE June 1993		3. REPORT TYPE AND DATES COVERED Final Report
4. TITLE AND SUBTITLE Demonstration Erosion Control Project Monitoring Program, Fiscal Year 1992 Report; Volume IV: Appendix C, Batupan Bogue Watershed Profiles and Cross Sections			5. FUNDING NUMBERS	
6. AUTHOR(S) Terry N. Waller, Lisa C. Hubbard				
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) U.S. Army Engineer Waterways Experiment Station Hydraulics Laboratory 3909 Halls Ferry Road, Vicksburg, MS 39180-6199			8. PERFORMING ORGANIZATION REPORT NUMBER Technical Report HL-93-3	
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES) U.S. Army Engineer District, Vicksburg 3550 I-20 Frontage Road Vicksburg, Mississippi 39180-5191			10. SPONSORING/MONITORING AGENCY REPORT NUMBER	
11. SUPPLEMENTARY NOTES The main text and Appendixes A-F were published under separate cover. Copies are available from National Technical Information Service, 5285 Port Royal Road, Springfield, VA 22161.				
12a. DISTRIBUTION/AVAILABILITY STATEMENT Approved for public release; distribution is unlimited.			12b. DISTRIBUTION CODE	
13. ABSTRACT (Maximum 200 words) <p>The purpose of monitoring the Demonstration Erosion Control (DEC) Project is to evaluate and document watershed response to the implemented DEC Project. Documentation of watershed responses to DEC Project features will allow the participating agencies a unique opportunity to determine the effectiveness of existing design guidance for erosion and flood control in small watersheds. The monitoring program includes 11 technical areas: stream gaging, data collection and data management, hydraulic performance of structures, channel response, hydrology, upland watersheds, reservoir sedimentation, environmental aspects, bank stability, design tools, and technology transfer.</p> <p>Appendix C documents the channel cross-section and profile data used in the detailed geomorphic assessment for the Batupan Bogue watershed that is presented in Volume I of this report.</p>				
14. SUBJECT TERMS Batupan Bogue Channel cross sections Channel profiles			15. NUMBER OF PAGES 295	
			16. PRICE CODE	
17. SECURITY CLASSIFICATION OF REPORT UNCLASSIFIED	18. SECURITY CLASSIFICATION OF THIS PAGE UNCLASSIFIED	19. SECURITY CLASSIFICATION OF ABSTRACT	20. LIMITATION OF ABSTRACT	